THE ARCHITECT & BUILDING NEWS

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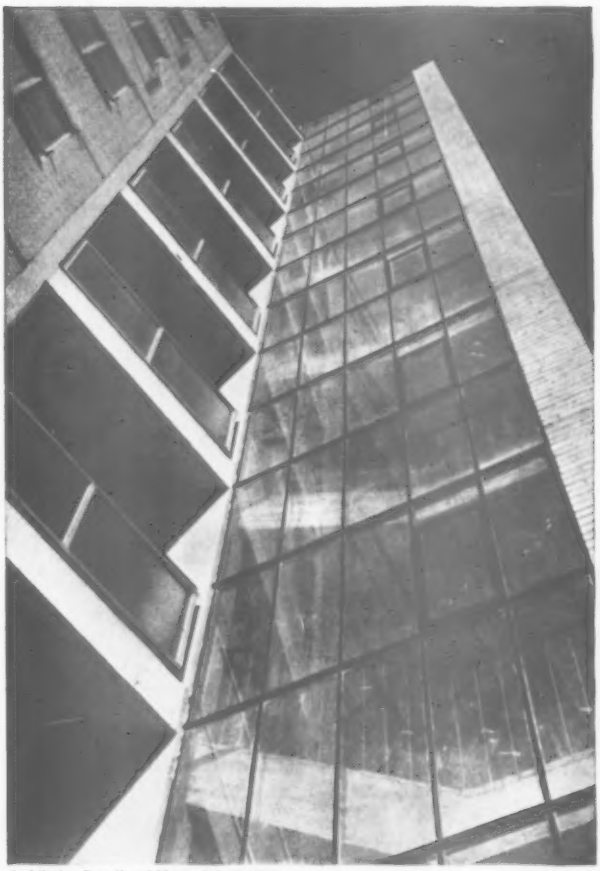
- CURRENT MEASURED RATES

JANUARY 29, 1953 · VOL. 203 · NO. 5 · ONE SHILLING WEEKLY

LONDON LOOKS UP

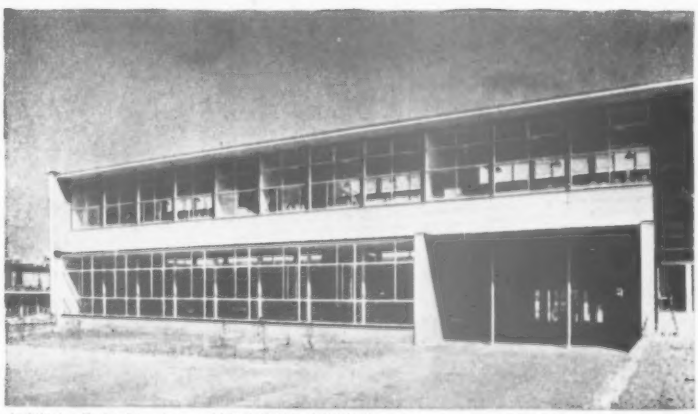
The new housing estates in the capital are keeping Londoners in London—which is where sparrows, Dr. Johnson and Londoners prefer to live. New houses and flats, taking the place of dismal bomb sites and scarecrow slum tenements, are beginning to take the edge off London's housing problem.

Compared with the "buildings" and "dwellings" of a past era, it is noticeable that the new architecture is ablaze with windows—many of which were produced by Williams & Williams of Chester. Working with architects of vivid imagination (and bringing to the problem all the vigour and enthusiasm of crusaders) Williams & Williams are producing windows and glazing that fulfil the high standards of contemporary design. In the housing estates shown, and many others across the face of Britain, Williams & Williams are doing a good job—as indeed they are in buildings and factories, art galleries and aeroplane hangars all over the world.



Architects: Powell and Moya, A.A., R.I.B.A. 1

Architects: Tecton. 2



Architects: Yorke, Rosenberg and Mardall, F.F., A.R.I.B.A. 3

Architects: Powell and Moya, A.A., R.I.B.A. 4

1. These flats at Pimlico are part of the Westminster City Council's housing plan that will eventually cover 30 acres. Williams & Williams supplied metal windows, metal doors, and Aluminex Patent Glazing for this enormous project. 2. Expert use of standard metal windows helped produce the striking effect shown in this elevation of the flats at Finsbury. 3. New houses mean new schools. At this school in Lansbury, Williams & Williams produced all the doors and windows. Williams & Williams have put windows and walls of glass into 128 schools all over the country. 4. The Pimlico Polygon, a new landmark in hot water tank cladding—and indeed a new landmark on London's river—is covered with Aluminex Patent Glazing. The all aluminium glazing bar is used in reverse so that broken glass can be replaced from the galleries inside the glass surround eliminating need for scaffolding. Aluminex, together with metal windows and doors, is produced by Williams & Williams of Chester.

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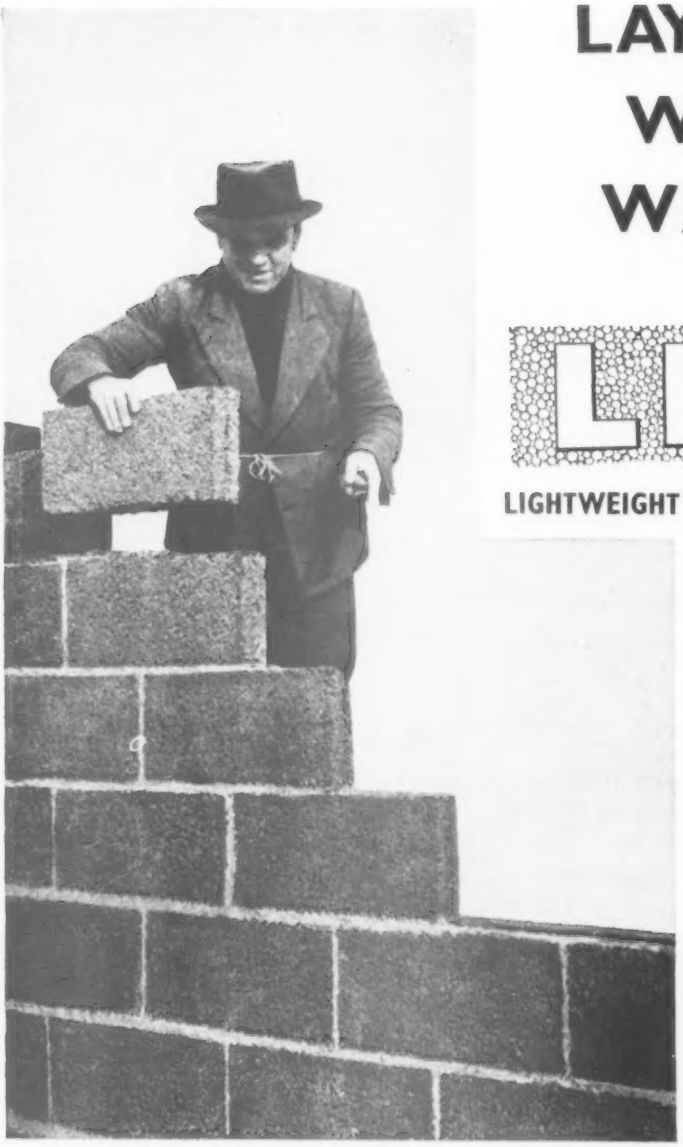

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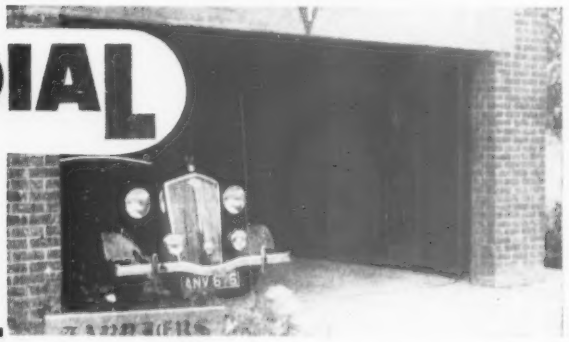

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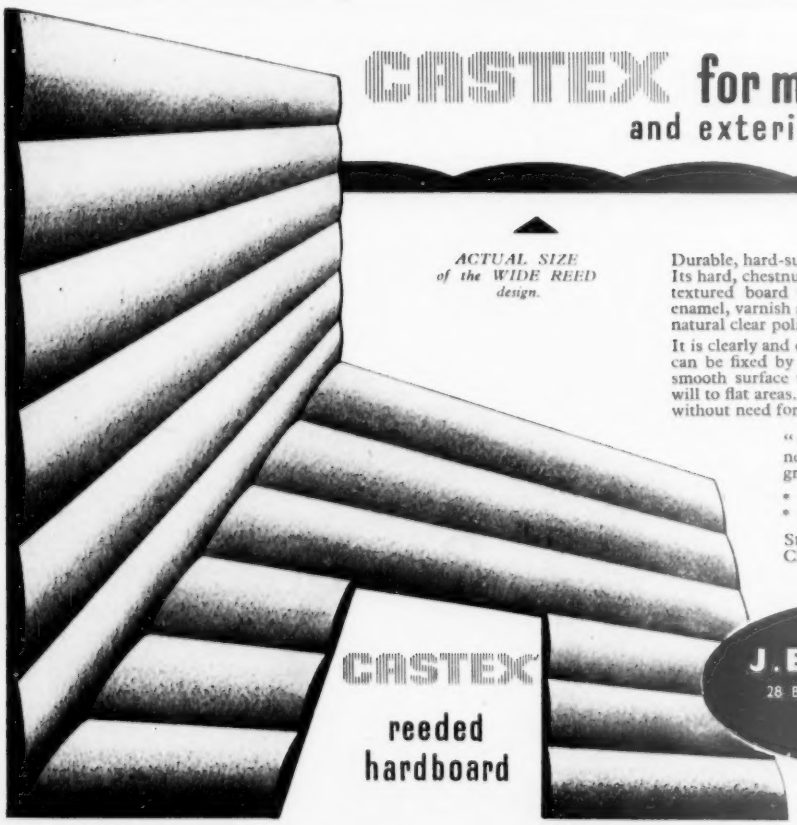

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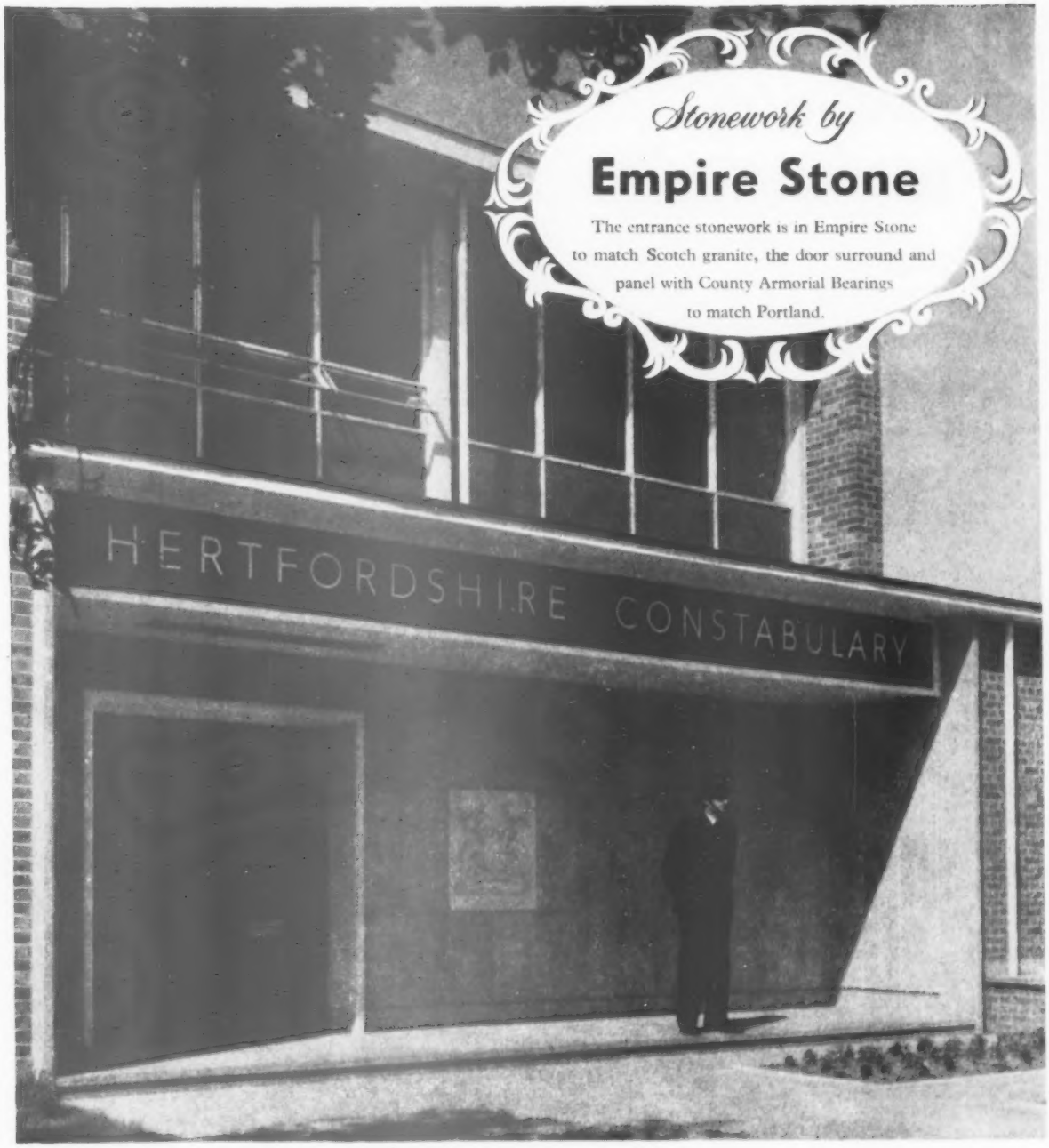

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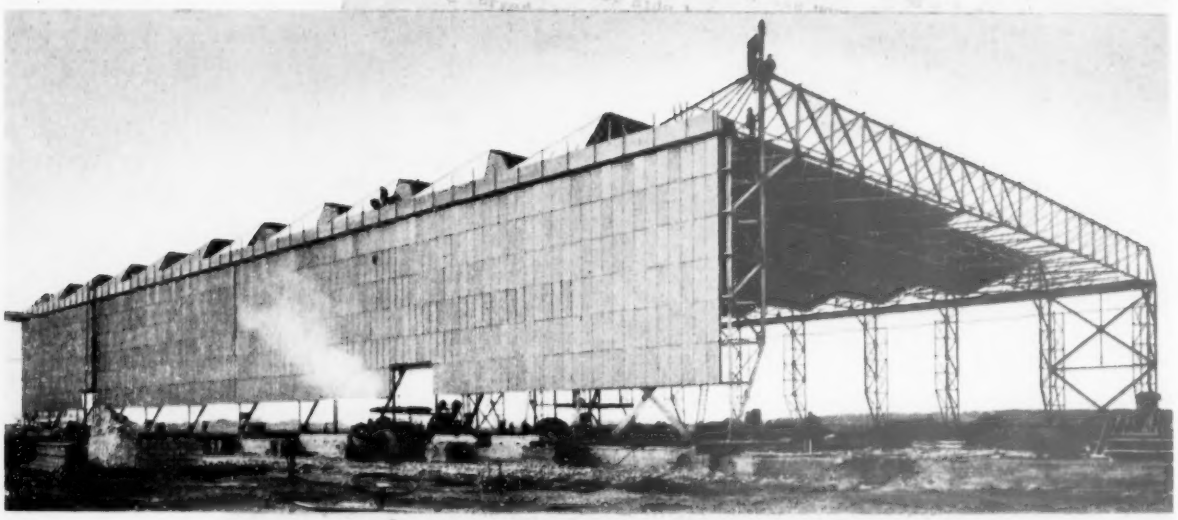

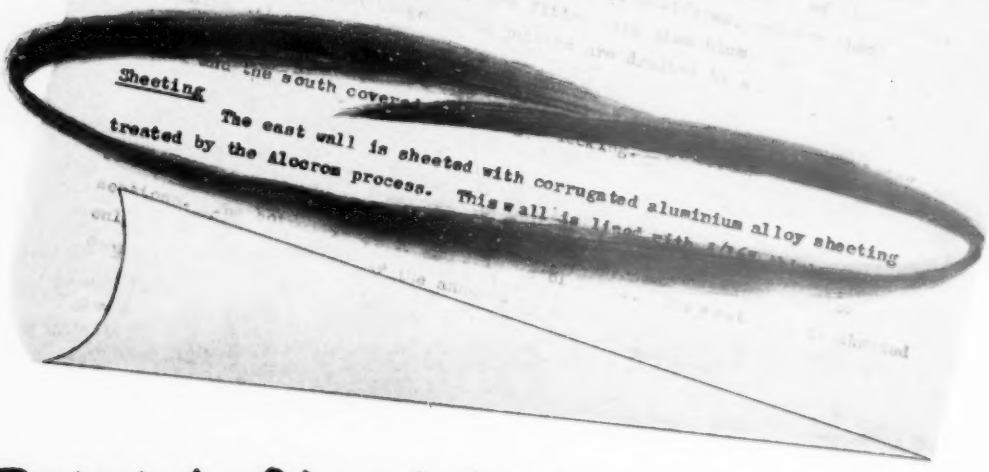

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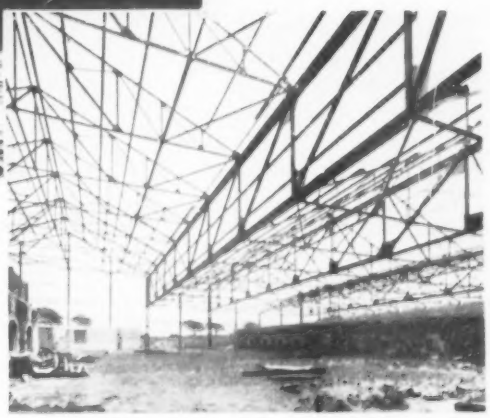

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January 29, 1953

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MORE OFFICE BLOCKS

THE present ban on the building of private enterprise office-buildings is, according to the Ministry of Works, being reconsidered by the Government. The ban is of long standing and during its existence the only new non-government office buildings to have been built under civil building licences are those with a Government guarantee of occupation under the lessor scheme. Most of the larger constructions under this "exception to the rule" have been in London.

When the financial and licence restrictions on housing were eased at the beginning of this year, we commented that any expansion that might accrue in the volume of house-building would be governed basically by the amount of building materials available over and above priority works of other kinds and by the availability of capital to build the houses. After private-enterprise housing we are to have, it seems, private enterprise office-building. In both fields, before the war, there was much building and financial speculative activity. Doubtless with office buildings money will be more readily forthcoming, in spite of a general uneasiness about capital expenditure at this time, if only because office buildings are not subject to rent-restrictions acts or the obligations to charge agreed rentals. There is a reservoir of capital at present shared between the banks, the insurance companies and building societies which may well be tapped partially to supply the working capital required for private office building.

The practical physical difficulties will arise with materials and labour. While there have been recent assurances that the steel situation has improved and that even the reinforcing-rod position can no longer be called a "bottle-neck," any expansion of building in the field of large multi-storeyed buildings may reveal, with greater or less rapidity, shortages and difficulties, if not with steel, then with cement, bricks and a number of essential components, particularly in the non-ferrous metal range. It would be unwise to reduce the export of cement or to turn it from other priority work; the present shortage of good quality facing bricks is not a new one. As far as labour goes, is it to be turned from housing or other priority work or can redistribution of the market's resources reveal reserves of the right quality for large building projects?

If the ban is raised by the Government, the hopes of those towns and cities which have central area problems of long standing will also be raised. The City of London may be able to bring to material results its preparations in planning over its areas of declared control for development. At the same time, if any substantial expansion of this sort of building takes place, it will be a severe test of the resources and even the basic principles of three-dimensional town planning. Enough mistakes have been made in certain isolated instances and enough comment has already passed for that point of view here to remain without further stress.

The redevelopment of central urban areas or even the amount of reorientation of planning factors caused by the erection of a single large office block within a central area, again bring to the fore problems that must be met by a co-ordination of thought and imagination, not only by the promoters of building schemes, but by the local planning authorities, the transport authorities and the housing authorities.

Concentration or re-concentration of large numbers of office workers is likely to raise many issues. First and foremost must be the welfare of those who have to travel to and fro to the concentrations and who have to work in the new buildings for eight hours of every working day. The new standards of light and air already existing under regulations

or through recommendations of codes or government publications must be brought into regular use and regarded as inviolate factors in town planning. New office blocks must not repeat the mistakes of the past.

Transport may have to be reviewed when exceptionally high concentrations occur and in this sphere surface transport will rank highest in avoidance of congestion. Car-parking will become an even more serious problem in central areas when bomb-site parking disappears. It is essential that new planning insists on getting the vehicles off the streets, the latter are for movement and not for stacking purposes. Therefore all deliveries and dispatches and all parking of vehicles connected with a large new office building should be within the site-curtilage of that building. Basement and even largely ground-floor garages may well be a partial answer, for these are the least well-lit levels of any building and passenger and goods lifts are essential equipment anyhow.

To avoid to some extent the external spread of the towns into the green belts and the countryside, it is necessary to examine all methods of housing workers within the central areas. Any such housing facilities will avoid long travelling distances to and from workplaces and ease the pressure on the outer areas for those who choose to travel. The central areas housing must have reasonable amenities and would, in most instances, probably consist of the smaller type of dwelling for single people or smaller families. Is there any reason why the planning authorities should not insist on the top-floor or the two top-floors of all offices being made available for flat or maisonette development? At levels of 80 to 100 (or more) feet city noise and dust is largely eliminated, light and air and even sunshine are more possible to enjoy and roof gardens and recreation spaces are not impossible amenities for such dwellings, with corresponding saving in ground space.

If the Government resolves to take the step it is considering, the resultant problems will be a challenge to all who think rightly about the future of our larger towns and cities. Who will get in first—the unscrupulous developer or official and consultant advisors with vision and some feelings for the future?

EVENTS AND COMMENTS

L.M.B.A. LUNCH

Annual General Meetings are usually deserted affairs where secretaries have worried looks for fear that there should be no quorum to pass the accounts. Such possibilities do not seem to trouble the London Master Builders Association for an attendance of between four and five-hundred members is a normal occurrence. It is true that between the meeting and the luncheon which precedes it a few members go home, but the great majority stay and many take an active part in the proceedings.

This year the Minister of Housing and Local Government was the guest of honour. He made a witty and lively speech composed and phrased in the Churchillian manner but, in fact, telling us very little that we did not know already. The audience found most of the things which Mr. Macmillan said entirely to their liking, but I noticed a strange lack of enthusiasm when he mentioned the very excellent government publications on building which are available to, and should be read by, all builders.

The meeting marked the end of Mr. David Woodbine Parish's presidency and showed him to be entirely unmarked by his gruelling. He tackled the job with such immense gusto that it is truly remarkable that he should have lasted the course and look, although he may not feel, as if he could do the whole thing again. He has been a most successful president and the L.M.B.A. must be thankful that it has a system whereby past-presidents are not relegated to the limbo but are used as the chairmen of committees. They are also presented with a badge of office so that at functions of the Association they are for ever marked and honoured and do not disappear quite so completely from view as retired mayors and presidents of the U.S.A.

It was very sad that Mr. Gerald Hill, the new president of the L.M.B.A. was prevented by illness from attending his investiture.

TOO MANY SOCIETIES?

A report of bad attendances at meetings of the Maidstone Group of the South Eastern Society of Architects brings up a question always at the back of my mind. Are there too many societies? Anyone who has had experience as Honorary Secretary of a society, be it Old Comrades, Ramblers, or to do with the arts knows that it is all kicks, no thanks and a constant toil to keep people interested. Is it all worth it? Obviously some associations, even if their meetings are not well attended, help the community in some way or other. Others might well be allowed to disappear, giving their devoted officers their longed-for freedom.

THE MODULAR SOCIETY

However many societies exist there is always room for the new one with a purpose and it is exciting to be in at its birth, particularly when the meeting is held at the Royal Society of Arts, midwife to so many brave enterprises. The inaugural meeting of the Modular Society was held last week under the chairmanship of Mr. Alfred Bossom, M.P., and was extremely well attended by all branches of the Building Industry. The purpose of the meeting was to explain the objects of the Society and to open the roll of members. Over a hundred of those present applied for membership on the spot. I was particularly pleased to hear the announcement that Mr. Howard Robertson, in apolo-

gizing for his absence, had said that the R.I.B.A. executive had approved the suggestion that he should join the Society in his official position as President. Mr. H. A. Binney, Director of the B.S.I., sent a letter of apology in which he wished the Society good luck and assured it of the co-operation of his Institution.

The aims of the Society are as follows: "The promotion of research, experiment, development and discussion (under certain circumstances also the undertaking of research and development) and collecting and disseminating information concerning a module and related dimensions, in the design and construction of buildings and in the manufacture of building materials, components, fittings and equipment in concordance with such a module, in order to provide buildings to the public at lower cost; and the furtherance of related improvements in technical methods." Membership is open to all who are interested in the aims, on an equal footing, the professional, contracting and manufacturing sides of the building industry. There is only one class of membership and the annual subscription is £2 2s.

A provisional committee is at present dealing with the Society's affairs, but in two or three months time a general meeting will be called to elect a committee from those who have joined. Anyone interested should write to the Secretary (*ad interim*), Miss A. F. Annand, 5, Carlton Gardens, S.W.1.

I see that it is the intention of the Society to debate at an early stage the question of the adoption of a module or group of related modules. It seems to me that this particular question is the very nub of the thing, indeed at question time at the meeting there were pleas first, that, if I heard correctly, practical considerations should be given priority over theories, and secondly, that there should be no fixed module and that things rather than dimensions should be standardized. I see rocks ahead and thick jungle on the foreshore.

CONWAY CASTLE AND TOWN WALLS

The M.o.W. has just published a statement about its negotiations with the Conway Town Council on the subject of the restoration of Conway Castle and town walls. As long ago as 1948 a letter to *The Times* drew attention to the neglected state of this ancient monument which is considered to be the finest example of a mediæval walled town in Britain. The town council does not seem to be willing to hand the monument over to the Ministry nor to repair it itself. For over two years the M.o.W. has been negotiating for a long lease of the castle and walls and sent its last observations to the Council in November, 1952. The matter is said to be under consideration by the Council. Meanwhile the condition of the castle and walls deteriorates. The Ministry is willing to begin work pending agreement about the lease, provided that this is reached in the immediate future. If agreement cannot be reached soon the Minister has said that he would feel obliged to make a Preservation Order which would enable him to take the monument into guardianship. Of course one does not know the whole story but it looks as if the Conway Town Council is in the wrong. If it has no money to look after this great monument it should at once hand it over to the proper authority. Anyone who has seen the work of the M.o.W. in restoring and preserving castles will agree that no better guardians can be found in this country. Let us hope that the Council will quickly agree to the lease, if it does not then let the Minister go ahead with the alternative as quickly as possible, for the case has been delayed long enough.

BUILDING INVENTIONS COMPETITIONS

The promoters of one of the competitions which I mentioned on this page some weeks ago have pointed out that my remarks might discourage competitors from entering. They were not, of course, intended to do so. Messrs. Acrow's agents point out that they do not expect to receive details of major building inventions of great value because obviously, anybody who had such an invention would not dream of parting with it completely for the sum of £250, let alone a minor prize of £10. They also point out that a similar competition was held in 1951 and that the winning entry was only concerned with the germ of an idea and that of a comparatively minor nature.

PLAYGROUND IDEAS WANTED

The Borough of St. Pancras wants people to send them new ideas for playground equipment. The question of payment for any design used by the Council will be discussed when it arises. The playgrounds of Scandinavia abound in good ideas which have not so far been adopted in this country. Stockholm has in its children's park a derelict lorry suitably painted and anchored, upon which children play buses for hours on end. It also has a delightful water game which would perhaps be frowned on by the Metropolitan Water Board. Four stand pipes with nozzles pointing horizontally are arranged at the centre of a circle. Each of the standpipes points outwards towards a spring-operated valve hidden under a small platform placed on the perimeter of the circle. If a child stands on the platform a jet of water squirts from the appropriate standpipe. No clothes are worn for this delicious pastime. In Denmark they go in for children's junk yards. These are not things of beauty and must be hidden behind trees or shrubs for they consist of pieces of ground where one may dig to one's heart's content and also construct houses or forts from waste building material provided by the municipality. Some slight supervision is, I believe, provided. This young builders' paradise is said to be very good for the tougher children. Stockholm also has climbing sculpture made of concrete or wood. The concrete sort with its dark interiors is inclined even in Sweden to become rather smelly. The less sophisticated amusements such as the pony or goat cart and the punch and judy still seem to be the favourites in France. The Guignol is usually housed in a permanent hut with benches in the open surrounded by a hedge. You pay your penny at the gate and this cuts out the slinkers-off when the hat is passed round. The French have an excellent idea for yacht ponds. Very good model sailing boats may be hired by the half hour from a man with a barrow. Thus all may share in the pleasure which is enjoyed by the comparatively few in Kensington Gardens.

CONFERENCE ON TROPICAL ARCHITECTURE

Elsewhere in this issue you will find full particulars of a conference on tropical architecture to be held in London towards the end of March. This is a very good idea. Many architectural students from tropical countries come here for at least part of their training and are rewarded by finding that, with few exceptions, no one here knows anything about building in tropical climates. A number of British architects have been working on projects in the

hot countries since the war and the experience of some of them, backed as it is by knowledge of western methods, is to be made available at this five-day conference. It must, of course, be only a beginning. What is wanted is a permanent course for architects proposing to practice in the tropics. Such a course may easily result from the conference. It is particularly satisfactory to note that the originator of the idea of the conference and its honorary secretary is an African, Mr. Adedokun Adeyemi.

ABNER

NEWS OF THE WEEK

Royal Gold Medal for Architecture 1953

Her Majesty the Queen on the recommendation of the Royal Institute of British Architects has awarded the Royal Gold Medal for Architecture for 1953 to Le Corbusier (Charles Edouard Jeanneret). This is the second occasion in recent years in which the medal has been awarded to a Frenchman. The previous occasion was in 1948 when Auguste Perret was the recipient.

Building Tendering

Mr. J. Ian Robertson, of Burton, President of the National Federation of Building Trades Employers, at the Annual General Meeting of the Eastern Federation of Building Trades Employers at Cambridge, on Wednesday, January 21, said "There has been much comment recently about tendering for building jobs and representatives of the National Federation will soon be getting around the table with representatives of the R.I.B.A. and the R.I.C.S. to examine this difficult and complicated subject. It will need very careful thought indeed because, before changes are suggested, we must be sure that they are real improvements to a system which, by and large, has worked reasonably well in the past. The National Federation is most anxious, particularly at this time of high prices, that there should be the fullest possible competition in all sections of the building industry."

Colour in Schools

There will be a joint meeting of the R.I.B.A. and the Illuminating Engineering Society at the Lighting Service Bureau, 2, Savoy Hill, London, W.C., on February 10 at 6 p.m. (tea at 5.15). The Ministry of Education Bulletin on "Colour in Schools" will be introduced by David Medd, A.A.Dipl., A.R.I.B.A. The design of colour schemes will be discussed from the architect's point of view, and the usefulness of the Munsell system to the architect.

Conference on Tropical Architecture

To meet the need for a more intense study of the problems connected with Architecture in Tropical Countries; a committee has been set up to organize a Conference on Tropical Architecture to be held at University College, London, in March from Monday 23 to Friday 27.

The organizing committee is as follows: Alister MacDonald, F.R.I.B.A., *Chairman;* Professor H. O. Corfiato, and Arthur M. Foyle, University College; Professor G. P. Crowder and Dr. D. H. Koenigsberger, London School of Hygiene & Tropical Medicine; Frank Rutter, F.R.I.B.A.; Percy Johnson-Marshall, A.R.I.B.A., A.M.T.P.I.; and J. R. Williams, Colonial Office. The Hon. Secretary is A. Adedokun Adeyemi.

Applications for membership of the Conference are obtainable from the Organizing Committee, Conference on Tropical Architecture, Easter, 1953, Bartlett School of Architecture, University College, Gower Street, London, W.C.1.

A Victorian Evening

Brixton Architectural Society held a Victorian Evening on January 15, at the George IV, Brixton Hill. This annual junket by architectural students showed evidence of a great deal of trouble having been taken over the decorations but rather less on the sketches. Mr. and Mrs. Woodbine Parish looked in in the early part of the evening and received their share of ragging, from the chair, in the best of spirits. The presentation was well sprinkled with topical quips—the head of the architectural department taking every opportunity to barrack from the front row without appearing to halt the great release of repressions which is the prime function of this sort of evening.

Sausages and pickled onions were washed down with copious quantities of wallop, Queen Victoria's health was drunk, Mafeking was relieved and melodrama, booed, hissed and cheered, rounded off in the evening.

OBITUARY

The death has been announced of Sir Frank Mears, P.P.R.S.A., Hon. R.A., F.R.I.B.A., LL.D. (Edin.) M.T.P.I., F.R.S.E., in New Zealand, where he had gone with Lady Mears to spend some months with their son.

Sir Frank was chairman of the Amenity Committee of the North of Scotland Hydro-Electric Board, and until 1950 a member of the Scottish Committee of the Arts Council of Great Britain.

He was appointed in 1945 Consultant to the Central & South East of Scotland Regional Planning Advisory Committee, and was responsible for the Improvement Plan for Perth which was accepted by the Town Council in 1951. With Sir Patrick Geddes he designed the National Library in Jerusalem. He designed many bridges in Scotland including King George VI Bridge, Aberdeen. He also designed a number of memorials including the monument to the Royal Scots Regiment, Edinburgh.

COMING EVENTS

A.A.

Annual Exhibition of Photographs by Members, 36 Bedford Square, open until February 20, 10 a.m.-6 p.m., Saturdays 10 a.m.-1 p.m.

The Royal Institution of Chartered Surveyors

February 2, at 5.30 p.m. Discussion on the Government's White Paper (Cmd. 8699) on the Amendment of the Financial Provisions of the Town and Country Planning Acts, 1947, which will be opened by Lieutenant-Colonel Derek Walker-Smith, M.P. At 12, Great George Street, S.W.1. Admission by ticket only. Application should be made to the Secretary of the Institution.

The Housing Centre

February 3, at 1.15 p.m. Mr. F. N. Beaufort-Palmer, Chairman, Hammersmith Rent Tribunal, talks on "Rent Restrictions," at 13, Suffolk Street, Haymarket, S.W.1.

Royal Institute of British Architects

February 3, at 6 p.m. President's Address to Students. Criticism by Howard V. Lobb, C.B.E., F.R.I.B.A., of work submitted for Prizes and Studentships. Presentation of Prizes. At 66, Portland Place, W.1.

Student Planning Group

February 5, at 6.30 p.m. D. L. Holms, B.A., of the British Association for Commercial and Industrial Education, will speak on "The Problems of Group Discussion in Their Relation to the Formulation of Planning Policies," at 28, King Street, W.C.2.

Town Planning Institute

February 5, at 6 p.m. Professor H. C. Darby, M.A., Ph.D., talks on "Man and the Landscape," at The Livingstone Hall, Broadway, Westminster, S.W.1.

CORRECTIONS

On page 80 of the New Year Issue the House at Portsmouth was designed by A. G. Goodair, and not A. G. Goodwin.

Lockleaze Church, Bristol, referred to on pages 66 and 70 of the same issue is a Presbyterian church designed by Burrough and Hannam, architects.

Dow Prize Competition

Last year the Illuminating Engineering Society announced that in memory of John Stewart Dow a biennial competition would be held to encourage collaboration between students of illuminating engineering or those branches of engineering concerned with lighting and students in other fields in which lighting plays an important part. The closing date for the first competition was November 30, 1952, the prize being a cash award of £75.

The first competition was intended to encourage collaboration between engineers and architects and took the form of the layout, artificial lighting and decoration of a ground floor showroom of a provincial shop selling sports goods.

In all the arrangements for the competition the I.E.S. had the co-operation of the Royal Institute of British Architects and the Institution of Electrical Engineers.

Twenty-six entries were received for the first competition nearly all being from teams of engineers and architects.

The members of the winning team were: W. D. Tyrrell, Croydon Polytechnic (Illum. Engr.); T. A. D. Bindon, South East London Technical College (Elec. Engr.); E. W. Uglow, S. M. Gray (Miss), C. G. Crowfoot, R. G. Smith, all of Regent Street Polytechnic and all architects.

Highly commended by the assessors was an entry from South Africa submitted by R. S. Yates, South African College of Science and Technology (Illum. Engr.); J. Yorke-Hart, Pretoria University (Architect).

The entries by D. S. Bottomley, Huddersfield Technical College (Architect); J. D. Vale, Birmingham College of Arts and Crafts (Interior Decorator) and N. E. Wilkinson, Birmingham College of Arts and Crafts (Industrial Designer) were commended by the assessors.

The entries for the competition will be on view at a special meeting of the I.E.S. at 6 p.m. on Wednesday, February 25 at the Lighting Service Bureau, 2, Savoy Hill, W.C.2. At this meeting (at which the awards will be presented) the assessors for the competition, Mr. R. O. Ackerley and the Hon. Lionel Brett, M.A., A.R.I.B.A., will discuss the entries. The I.E.S. invites all who are interested to be present at this meeting.

National Parks Commission: Further Appointments

Mr. Harold Macmillan, Minister of Housing and Local Government, has made two additional appointments to the National Parks Commission. They are: Mr. J. F. Wolfenden, C.B.E., Vice Chancellor of the University of Reading; and Mr. W. B. Yapp, Lecturer in Zoology in the University of Birmingham.

BISHOP'S BRIDGE ROAD HOUSING SCHEME, PADDINGTON

Talk by Denys Lasdun at the Institute of Contemporary Arts

IT was refreshing to find at the I.C.A. on Tuesday last an architect with not only a philosophy but a large housing scheme to apply it to. In the second of the series of architectural criticisms conducted by J. M. Richards, Tecton Drake & Lasdun's Paddington scheme was under review. The evening began with an exposition by Denys Lasdun of the problem of their architectural approach and its application to this site.

The problem was the creation of a contained urban community in an area of mid-Victorian houses with large gardens, at a density of 176 persons/acre. The philosophy was based, as is obligatory, on Commodity, Firmness and Delight. Commodity was defined as general uses and human needs, the link architecture has with life; Firmness, the link with science; and Delight, the link with art. Only by a balance of these requirements can architecture be created, though, and here's the rub, Delight is sometimes an independent quality, drawing from science and life if so inclined, or pursuing its wayward course across the cobbles without them. In terms of architecture, Delight must contain the elements of Harmony, adequately covered by the ancients, Palladio and Corbusier, and the quality of wonderment. Architecture is conceptual, arrived at by analysis, and achieved through synthesis.

Now there will be few who disagree with these propositions, which disown a narrow functionalism and an excess of ideological content, and give considerable scope for æsthetic experiment. It is in the application that controversy has arisen.

At Paddington there has been no compromise with the existing buildings and layout. The boundary roads form an island in Metro-land, an outpost of Utopia. The new layout of six- and ten-storey blocks is clean, bold and ruthlessly formal. The spaces contained are precise and geometric, yet humane; the buildings form a backcloth for human activities and their formality is softened by the vegetation of our grandfathers. From the standpoint of commodity the flats leave little to be desired; the rooms are perfectly adequate and the kitchens excellent. The lack of balconies was pointed out but discussion soon rose to the æsthetic level and stayed there.

The completed ten-storey block came under heavy fire from the purists, and the morality of drawing a veil over a façade was questioned. The architect's contention that the pattern enriched and retained the human scale was somewhat querulously received, and there were mutterings of Formalism (dread word) and ornament. A more serious charge was the negation of the individual implied in the merging of each unit into an overall pattern, and that the building is a mere exercise in ingenuity. Certainly there is some truth in these assertions, and the fact that they are made means that this exercise in Delight has not altogether come off. But surely in every elevation there is a pattern to be discerned, and Paddington is perhaps an overworked example of this tendency.

There are very few post-war housing schemes in London to which it is possible to take a knowledgeable foreign architect without shame, and Paddington is probably one of the best. Here at least is an attempt at the brave new world, without the current vices of cosiness and provincialism and which is a formal and coherent statement.

The first block of flats at Bishop's Bridge Road nears completion. The scheme was previewed in detail in the A. & B.N. issue 28.7.50.

IN PARLIAMENT

Historic Houses

Mr. Colegate, who has secured the first place in the ballot for private members' motions on Feb. 6, gave notice that he would then call attention—again—to the Gowers report on historic houses. He will move a resolution on which a debate will take place. On January 20 he questioned the Chancellor of the Exchequer about the introduction of legislation relating to the preservation of historic houses, but Mr. Butler was able to say only that he hoped to make a statement soon. The Chancellor did say, in reply to another question, that on the assumption in the report that about 2,000 houses would be affected, the annual loss of revenue if the Gowers proposals were fully implemented would be about £10 million.

Museum Piece

Apparently the Stoke-on-Trent local authority proposes to build a prefabricated art gallery and museum. Dr. Stross asked the Minister of Housing and Local Government what representations that authority had made to the Department for permission to build and when he would give that permission. Mr. Marples, the Parliamentary Secretary, said that the council had submitted this proposal for which the estimated cost was £25,000, and their representatives had discussed it with the Department. The Minister could not authorize the scheme in present circumstances but he had authorized expenditure to meet the council's immediate needs. Dr. Stross indicated that he and the local authority had further information to submit which would throw new light on the matter. (Jan. 20.)

Conflict on Repairs

Mr. Eric Fletcher asked if the Minister of Housing and Local Government would introduce legislation to deal with the increasing number of houses that were falling into disrepair and becoming uninhabitable. Mr. Marples's answer was that this was one of the many housing problems that the Minister had under consideration. Pressed further, he acknowledged that it was a serious problem, but could add only that it was closely bound up with other problems which required much thought and consideration in order to find a solution. If Mr. Fletcher had any constructive suggestion to offer, he was sure the Minister would consider it.

Mr. Aneurin Bevan claimed that in 1948, when the largest number of houses was built—under a Labour Government—there was spent on new housing £554.9 millions, and on repairs to houses £636.4 millions. Last year the amount spent on new houses was £808 millions, and on repairs £663 millions. On these figures he asserted that this Government were building new houses at the expense of the dereliction of existing houses. Mr. Marples refused to accept this contention. Under Mr. Bevan's administration, he retorted, there was not really good value for money. (Jan. 20.)

Contract Reminder

A complaint that local authorities were laggard in their contract payments to builders was implied in a request by Mr. Grimond that the Minister should circularize authorities on the desirability of prompt payments. Mr. Marples said that a circular was issued last April. There was no reason why payments should be behind. He hoped that the point would receive publicity, because monies due under contract should be paid promptly and certainly within the period named in the contract. Those were the instructions contained in the circular, and local authorities should obey them in the interests of efficiency. (Jan. 20.)

Relative Costs

It was suggested by Dr. Stross that the proportion of building costs attributable to wages had been falling since 1947, but the cost attributable to materials had been increasing. He wanted to know the cause for the rise in materials, and what plans the Minister of Works had for checking it. Mr. Eccles replied that the percentage increase in the cost of building materials since 1947 was less than the corresponding increase in earnings of building workers. In the past year wages had risen, but the price index of building materials had declined from 135 to 130. Labour costs had nevertheless fallen in relation to material costs, partly because productivity was improving and partly because there had been a transfer from maintenance to new construction, where more materials were used per man-hour. (Jan. 20.)

A Scottish investigation into building costs has fallen under the economy axe. Mr. McInnis asked the Secretary of State when the second report of the Scottish Building Costs Committee would be available, and was informed by Mr. Stuart that as part of the Government's economy measures he had asked the committee not to proceed with their inquiries on the comprehensive lines they had planned. Instead of producing a report they had given him material which would be of assistance to the Scottish Office. (Jan. 20.)

LEGAL NOTE

Prior to the alterations made by the London Building (Amendment) Act, 1939, the Council were not entitled to proceed for the recovery of expenses incurred by them in repairing a dangerous structure against the freeholder if the premises were held under lease from the freeholder. In such cases it was the leaseholder who would be liable.

This point was decided by the case of L.C.C. v. Stilgoe (1932) 1 K.B. 303, which determined that this was the effect of s. 194(a) of the 1930 Act on the question of liability for the expenses.

But this section has not been re-enacted in its original form in the London Building (Amendment) Act, 1939. And the law under this Act appears to be therefore that the Council can proceed for the recovery of its expenses in repairing a dangerous structure even against the freeholder, notwithstanding that the premises are held at the time by other persons as lessees or underlessees.

But the practical problem has arisen as to whether the Council can proceed against a freeholder in such circumstances in respect of expenses incurred by it *prior to the passing of the* 1939 *Act* in repairing dangerous structures.

There are various stages in the proceedings, with regard to dangerous structures, and the stage that is in contemplation here is the stage where the Council, after service of the Dangerous Structure Notice and the obtaining of an Order directing the execution of the work, has in default entered and executed the work itself. Recovery of the expenses can then be enforced by proceedings in the Court where an Order for payment can be obtained. Under the 1930 Act, however, proceedings for the recovery of expenses could not have been brought against the freeholder, where a lease of the premises was subsisting. Had the Council therefore instituted proceedings for the recovery of the expenses before the 1939 Act, those proceedings would have had to be brought against the lessee, and the freeholder could not have been made responsible.

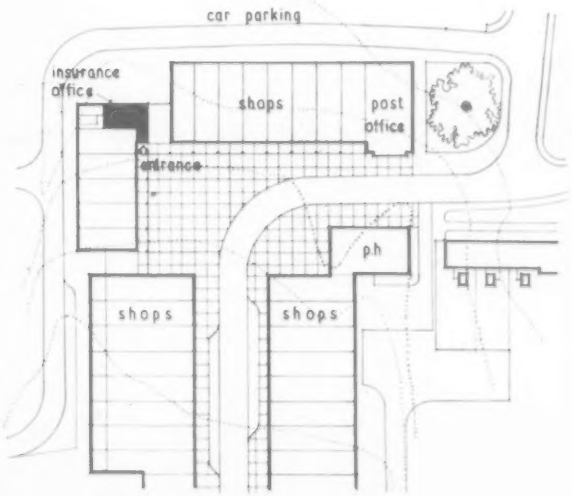
What appears to be happening now is that pre-1939 Act claims are being revived, and are being sought to be enforced now against the freeholder. So the point has arisen as to whether the freeholder can be shot at now in respect of a pre-1939 Act claim, in respect of which he was immune under the law as it stood prior to the 1939 Act.

The point is not an easy one, but the view has been expressed that a freeholder who could not have been made liable for expenses incurred by the Council before the 1939 Act was passed cannot now be made liable, notwithstanding that the bar against proceedings against him has been removed by the 1939 Act. For this purpose, there is a distinction between, at any rate, expenses incurred by the Council *before*, and expenses incurred by it *after*, the 1939 Act; the freeholder may be made liable in the latter case, but he may not in the former be deprived of the immunity that he previously enjoyed.

Unless, and until, a determination to the contrary is given by the Courts, claims against freeholders for the recovery of expenses incurred prior to the 1939 Act should be resisted.

Offices for the Royal Insurance Co. Ltd., Harlow New Town

The Inspector's Office. The deep grey patterned wallpaper is designed by Lucienne Day. The finish of the cupboard panels is dark french polished mahogany veneer with a recessed strip cellulosed white. The light fitting is by Troughton & Young.



SITE PLAN

architect: FRANK BOOTH, A.R.I.B.A., A.M.T.P.I.

THESE new offices the first for an Insurance Co. in any of the New Towns, are situated in the north-west corner of the shopping square in the Stow Neighbourhood Centre of Harlow.

The main accommodation consists of an Inspector's room 12ft. 0in. × 14ft. 0in. and one spacious reception room 21ft. 6in. × 17ft. 0in. divided into three functions: a general circulation space, a corner for the receptionist which is contained by the arrangement of the furniture, and a further space which is planned informally with table and easy chairs for discussion purposes. The public are not closed off by a counter, but are attracted

into the room by the plan arrangement and are encouraged to sit in the chairs.

Materials and Finishes

The ceiling is suspended and finished in perforated "Unitex" hardboard divided into 18in squares and painted matt white. Into this ceiling are recessed nine small circular lighting units together with continuous concealed fluorescent diffusing fittings down the two long walls. The ceiling is kept away from the walls and has a floating appearance when the lighting is on.

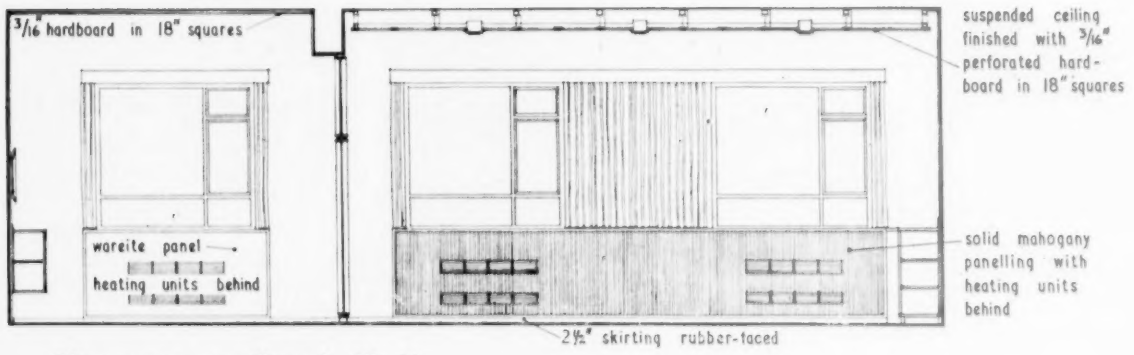
The walls are each treated differently. The entrance wall is flush panelled to a height of 9ft 6in with a figured fiddleback Honduras mahogany veneer on ¾in blockboard. The panel is 15ft 0in long. The veneer is french polished natural and toned down to a matt finish. In the centre of this panel is an electric clock designed by the Architect and this has a plate glass face 12in in diameter projecting 1½in from the panel face with polished brass studs forming the figures, simple hands and the encased works all in polished brass.

The external or window wall has a continuous panel below the windows which contains the heating units. These are 1 kilowatt Thermovent heaters placed in pairs with polished brass grilles to the air intake and extract vents. The units are thermostatically controlled. The panel is faced in solid mahogany planed with a vertical rippled effect finished in dark mahogany french polished. The whole panel is framed by a natural french polished mahogany surround which includes the window sill. A continuous pelmet is arranged over the windows which is painted the same colour as the walls—grey beige. The curtains are "Princes J" Yellow curtains by Tibor fixed to improved square-sectioned metal runners fitted with cord pulls.

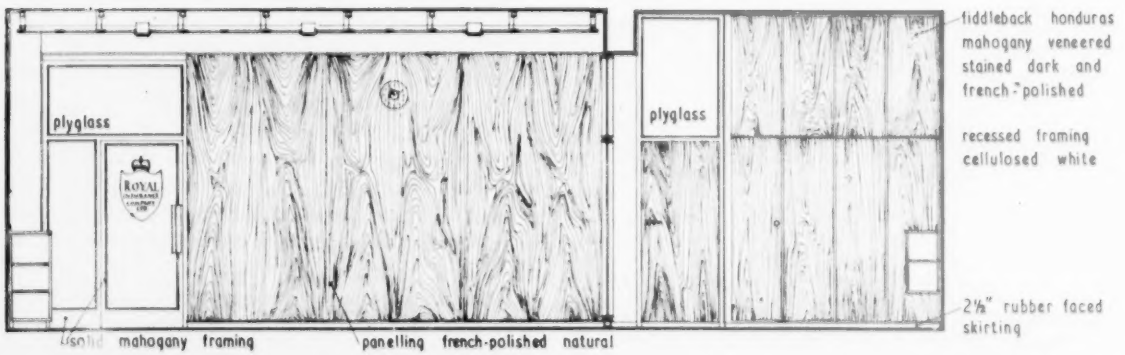
The end wall on the right of the entrance is plastered and papered with a rich green-grey linen textured wallpaper above a wall fitting which has a french polished mahogany top and surround containing a cupboard in the centre which has all the electrical switch gear behind a pair of mahogany veneered flush doors, french polished. On the right of this are a pair of heater units with a front panel of grey-blue satin "Wareite" and polished brass grilles as before. On the left are two three-drawer metal filing cabinets finished in polycromatic silver grey enamel. These fit under the mahogany top.

The left wall is a glazed screen dividing this room from

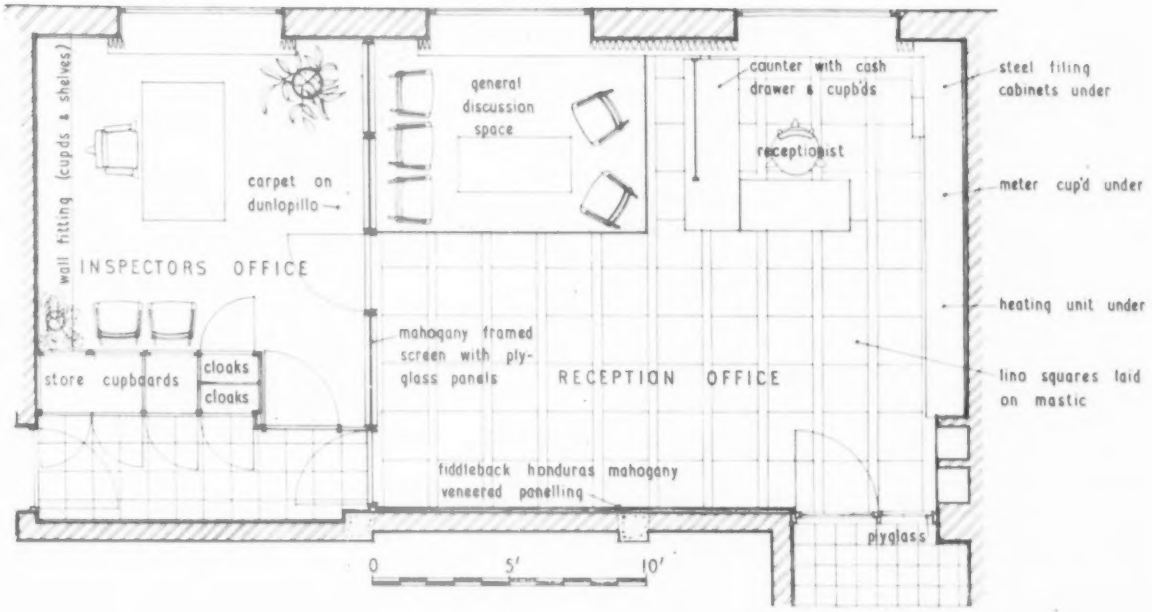
[Continued on page 140



Elevation to North Wall.



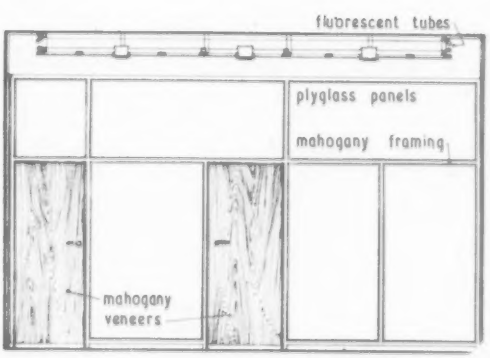
Elevation to South Wall.



Plan

Right, a view of the Reception Office looking towards the entrance door.

OFFICES FOR THE ROYAL INSURANCE CO.



Screen detail

Continued from page 138

the Inspector's Office and is in solid mahogany frames french polished with large sheets of white plyglass. This material is made up of two sheets of plate glass with a layer of glass fibre between. The two doors in this screen are finished in figured fiddleback Honduras mahogany and door furniture is by Dryads, Satin Chrome finish.

The floor is finished with heavy lino in 18in squares grey in colour and divided into panels by white lino strips. The floor is wax polished. The sitting area is covered with a plain fitted Wilton carpet, French lilac in colour.

The receptionists' desks are designed by the Architect and are in natural french polished mahogany veneer with drawer fronts in french polished sycamore veneer. Drawer grips are finished Satin Chrome. The typing desk is fitted with a special cash drawer and has an unframed plate glass screen fitted into the top of the desk dividing the receptionist from the sitting area. The loose table and chairs are designed by Peter Hvidt and Molgaard Nielsen and made by Fritz Hansen, Denmark.

A specially designed rack to take policies is in mahogany with a plate glass front and copper tubing divisions between each policy. The receptionist's chair is an adjustable Tan Sad covered in a plain grey moquette.

The Inspector's room is generally finished in similar materials to the reception office except the mahogany which is still a fiddleback veneer stained and french polished a deep mahogany.

The passage way which gives access to the toilet accommodation at the rear of the offices will be used as a store and is fitted with a store cupboard which extends from floor to ceiling and has flush doors in plain Honduras mahogany. Again the floor is covered with plain grey lino squares polished.

The whole of the work was carried out by Messrs. Courtney, Pope Limited of London.

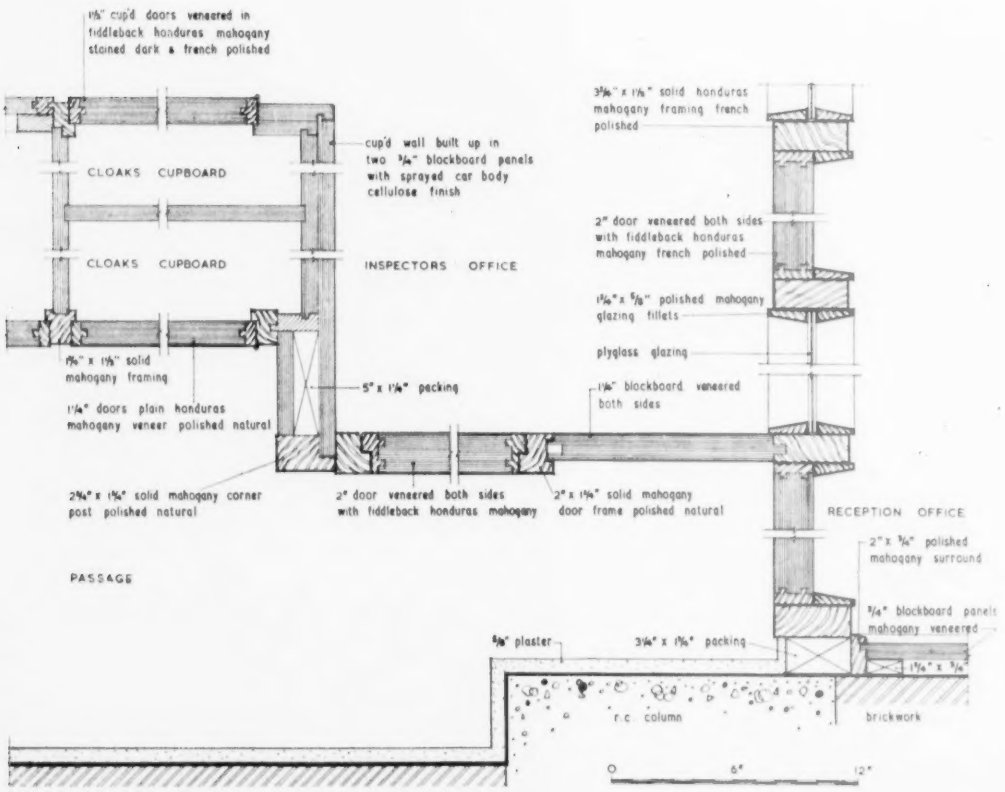
architect: FRANK BOOTH

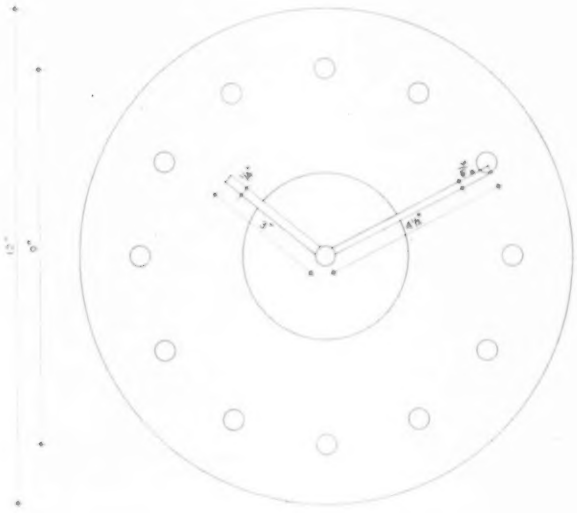
Main Contractor: Courtney, Pope Ltd.

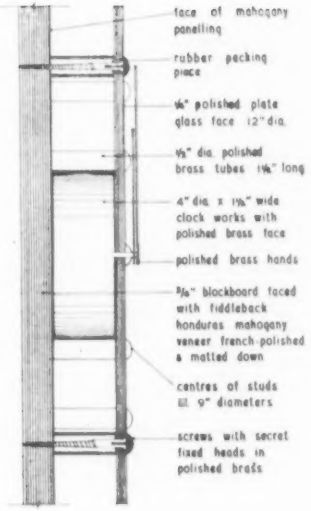
Subcontractors:

Electric Wiring and Fittings: Courtney, Pope (Electrical) Ltd.; *Furniture and Furnishings supplied and Fitted by*: Heal's Contracts Ltd., Tibor Ltd. (Curtain Fabric), Wilton Royal Carpet Factory Co. Ltd. (Carpets); *Flooring*: Cellulin Flooring Co. Ltd.; *Glazing*: Plyglass Ltd.; *Heaters*: Thermovent Heating Co.; *Ironmongery*: Dryad Metal Works Ltd.; *Plastering*: Tomei & Sons Ltd.

Joinery Details of the screen dividing the offices and passage.







Details of the electric wall clock designed by the Architect, which is fixed to the mahogany panelling on the south wall of the Reception Office as shown in the photograph below The end wall in the photograph is a mahogany framed screen with Plyglass panels, the joinery details of which are shown on the facing page. The perforated, "Unitex" hardboard panel ceiling is nailed to a timber frame which is suspended on timber straps fixed to bearers plugged into the 'pot' floor above.

OFFICES FOR THE ROYAL INSURANCE CO.

L.M.B.A. Annual General Meeting on January 20

In his Valedictory Address, the retiring President, Mr. D. E. Woodbine Parish, said:—

Before turning to a detailed examination of the Annual Report may I comment in general terms upon certain matters which have taken place during the past year which may have a bearing upon the trend of affairs during the next twelve months. We have seen a gradual but marked change of pattern in the industry and of the type of work upon which it is engaged. These changes have resulted in the main from the priority policy of H.M. Government in respect of exports, defence and housing. We have seen the end of the post-war period of cheap money. We have witnessed a substantial easing of building controls and also a return to a freer national economy. We have watched the crisis with regard to the supply of steel recede but with the increasing tempo of building we still have some cause for apprehension as to the availability of certain other building materials, particularly with regard to the supply of bricks. All these happenings have had their effect upon our industrial scene.

But overshadowing all these matters to-day is the supreme problem of the high level of building costs. The time for paying lip service to the need for increased productivity and cost reduction is past and unless the industry collectively adopts a more vigorous attitude of mind which will reflect a far greater personal sense of urgency to solving the problem than exists at present, these two related and pertinent objectives will continue to prove elusive.

We look forward with a sense of optimism to a year of increasing activity, but let us look beyond it and see that we are laying the sure foundations for a period of stability and a continuing demand for our services. Government orders and Local Authority housing may keep us reasonably employed for a time but these sources of work will not maintain our order books for ever. It is the man in the street who is our real customer and he will only employ us if our prices are economic and he feels he is assured of real value for money. To-day the little man is doing his own repairs and the big man is standing on the sidelines waiting for prices to fall.

Never before has the industry been in greater need of positive leadership and of enlightened and forthright direction in the conduct of its work at all levels. Never before has a broad and liberal approach to the solution of its problems been so urgently required. But contrary to popular belief the building industry generally is neither inefficient nor backward. In common with every other industry it is possible for us to improve our present performance by methodical study and applied common sense. These have always been the basic ingredients of the long and continuous process of our industrial evolution in this country and everyone who derives a livelihood from building is fully conscious of the enormous progress that has been made in this age-old industry during the first half of this century.

It is unfortunate that during the past year there has been an overt inclination towards witch-hunting in the "modus operandi" of the industry. This pastime has been based largely upon ill-informed and mischievous criticism made by individuals with an extremely limited knowledge of the very many complex problems facing the building industry and with a complete lack of understanding and disregard of the very damaging effect that their impudent meddling might have upon maintaining the highest level of accord and goodwill among the various interdependent sections of the industry.

It will be remembered that a Government report was issued towards the end of the war containing detailed recommendations with regard to the placing and management of building contracts. More recently the reports of the Working Party and Anglo-American Productivity Team were submitted to the industry for its guidance. These reports set forth advice covering a wide range of matters and were based upon exhaustive research and enquiry in this country in Scandinavia, the Netherlands and in the United States of America. But many of the fundamental recommendations contained in these three reports have unfortunately evaded notice or action. As a result the industry seems now to be faced with a further enquiry into these very same problems. One might venture to suggest that the most profitable course of action would be for an examination to be made into the causes that have precluded many of the recommendations contained in these reports from being implemented.

It would be quite unrealistic to suggest that there can be an immediate solution to all the problems facing the industry but long-term plans must be formulated and put into operation without undue delay. A survey of the past year is not discouraging for it shows that there are a considerable number of individuals representing the complete cross-section of the industry who are alive to their responsibilities and are continuously directing their skill, experience and ingenuity to setting higher standards of performance and personal endeavour. At the same time it is disturbing that this example is not more universal and that a degree of apathy still exists in some quarters towards change in any form.

As master builders we must accept a high measure of responsibility for the future well-being of the industry. Our constant aim and purpose must be to improve and perfect our chief function —that of Management. We need to have initiative coupled with a clear conception of the wide range and scope of the management function and an ability to define, organize and co-relate our various duties and to implement policies and procedures which are involved in directing an efficient industrial undertaking. In addition to our basic technical knowledge we must all develop a far better understanding of the human factors involved in our industry which by the demands made upon it is largely non-static and inconstant and, therefore, very much more difficult to administer than most other industries. We must be continuously selecting and training those individuals who display ability and self confidence and we must encourage them to grasp the importance of the social skills involved in supervising and directing work in the industry. We must maintain the closest contact with and have a complete knowledge of the important work carried on in the technical colleges and above all else we must ensure a progressive and enlightened outlook towards the many facets of our day-to-day affairs—improved management techniques; planned recruitment and training of apprentices; the development of managerial and supervisory training; detailed work and method study; comprehensive programming and site organization; the better communication of technical and industrial information to all levels; welfare and accident prevention; improved costing methods and the wider use of incentive payment schemes; increased mechanization to mention but a few.

L.M.B.A. Council

At the Annual General Meeting of the London Master Builders' Association on January 20, the following members were elected on the Council: Mr. F. L. Whitehead (L. & W. Whitehead, Ltd.), Mr. A. H. P. Hudson (John Greenwood, Ltd.), Mr. H. J. Falkus (Falkus Bros., Ltd.), Mr. H. H. Dexter (Killby & Gayford, Ltd.), Mr. A. W. Yeomans (Yeomans & Partners, Ltd.), Mr. E. G. S. Buchanan (W. H. Lorden & Son, Ltd.), Mr. W. G. Lilly (Walter Lilly & Co., Ltd.), Mr. E. S. Moss (E. S. Moss, Ltd.), Mr. H. W. Banks (H. W. Banks), Mr. K. J. Pearce (Pearce Bros. Builders, Ltd.), Mr. F. C. Steel (Truett & Steel, Ltd.), Mr. D. G. Howard (M. Howard (Mitcham), Ltd.), Mr. N. E. Wates (Wates, Ltd.), Mr. G. Haslehurst (G. Haslehurst (Builders), Ltd.).

York Courses on Protection and Repair of Ancient Buildings

The course on The Care of Churches, which is being held in York from April 9 to 16, has been over-subscribed and no more applications can be considered.

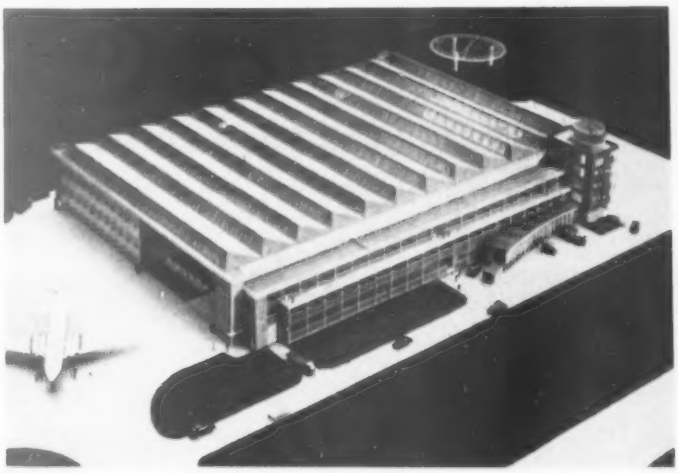
There are, however, still a few vacancies for the fortnight's General Course, March 23 to April 4. Applications should be sent as soon as possible to the Secretary, St. Anthony's Hall, York.

The hangar under construction and seen from South-West

Aluminium Hangar at Hatfield for the De Havilland Aircraft Co.

architects :
JAMES M. MONRO & SON

Consulting Engineer
for foundations : J. Bak



Model of the whole hangar

THE world's largest all-aluminium aircraft hangar at Hatfield is practically complete and the first Comet aircraft is stored inside. Designed to take eight of these £300,000 aircraft, the total cost of the building, which includes a steel framed office block and control tower, is approximately equal to that of one Comet.

The main structure consists of twelve aluminium alloy portal frames at 30ft centres, spanning 217ft between pinned bases and giving a clear floor area 200ft wide by 330ft long with a clear height of 45ft. The roof is of "North Light" construction with aluminium roof decking covered with bitumen felt, the glazing being fixed with aluminium glazing bars. The east side is sheeted with corrugated aluminium sheeting lined with insulating board and aluminium foil insulation. The west side abuts an annexe building which incorporates a control tower at the south-west corner. The north and south ends are fitted with doors giving a clear opening 200ft wide by 45ft high.

Materials

The aluminium alloy HE 10 (BS 1476/HE 10 WP) was chosen for the structural sections. The corrugated sheeting is of aluminium alloy NS 3 (BS 1470/NS3.¼H).

Rivets used in shop connections vary from ⅜in to ⅝in diameter and are in alloys of the NE5 and NE6 types. All rivets were closed cold, by squeeze or percussion riveters. Site connections are made with sheradized turned and fitted steel bolts, and spun galvanized black steel bolts.

Description of Structure

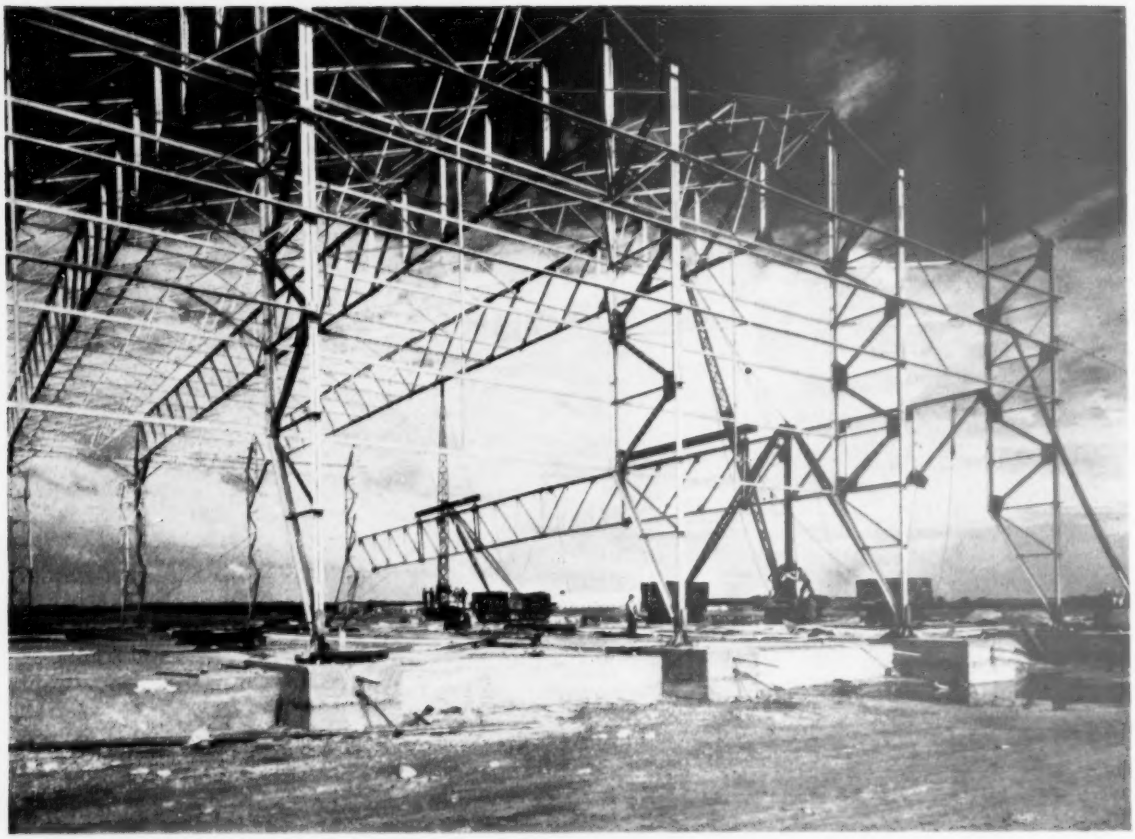
The main structure consists of twelve portal frames at 30ft centres. The legs of the portals are 8ft wide and the horizontal girder portions have a constant depth of 10ft throughout their span, except for a greater depth at knee positions to counteract the heavy fixing couples induced.

It is interesting to note that in a building of this size, aluminium structures are economically competitive with steel and reinforced concrete, particularly when ease of erection and availability of materials is taken into account. Furthermore, the structural designers may calculate the economic size of a member and have an extrusion die made so that the exact section required is used.

The primary and secondary members of these frames consist of double bulb angles, so designed that there is no danger of torsional failure at a lower load than that at which flexural failure would normally occur. Connections are made with ¼in or ½in thick gusset plates. Each portal weighs only 6 tons 7cwt.

The saw tooth trusses are designed with a view to ease of fabrication and each consists of a rafter, a horizontal tie, a queen tie and two internal struts, lateral stability is provided by two ties at rafter level and one at truss tie level. The roof decking is bolted directly to the top flange of the rafter section. There are 23 trusses to each bay, making 253 in all. Each truss weighs 175lb. Wind girders are introduced in the end bays of the structure between the last three portals.

The problem of expansion along the 330ft length of the hangar has been solved by introducing expansion joints at all structural connections on one side of the



Aluminium framework in course of erection. The "Freyssinet" cables can be seen protruding from the foundations.

sixth portal frame from the north end. The truss shoes at this position are connected to the portal frame by short links which are free to swing in an arc. All sheeting rails and ties on the east side have slotted holes at this position.

Roof

The roof is of north-light construction, the daylight requirements are fulfilled by incorporating twelve continuous runs of glazing 9ft 3in deep using aluminium alloy glazing bars and ¼in wired cast glass in 24in panes. The south slopes are covered with Briggs aluminium roof decking covered on the outside with ½in insulation board, bonded to the deeply corrugated decking with hot oxidized bitumen the whole being waterproofed with two layers of bitumen roofing felt with mineral finish to the capping sheet. The hip slopes are also covered in the same way. The valley gutters spill over these slopes into 2ft wide boundary wall gutters of robust construction which run the full length of the sides, widening at each corner to form 10ft by 12ft platforms, and are then continued along the ends. They are fitted with aluminium handrails so that they may be used as walkways. The gutters are drained by six 4½in dia. aluminium alloy down pipes.

Sheeting

The East wall is sheeted with corrugated aluminium alloy sheeting treated by the Alochrome process and lined with ⅜in thick asbestos-wood board and Sunfoil reflective insulation fixed by extruded aluminium "T" sections. The bottom 9ft 4in of the wall is of brick.

Doors

The main sliding and folding doors, which are of the Esavian type, give a clear opening 200ft wide by 44ft 9in high.

Two sliding and folding doors, 12ft wide and 15ft high are incorporated in the east wall.

Erection

Full advantage was taken of the light weight of the aluminium structural assemblies in planning the erection which was undertaken by Carter-Horseley (Engineers), Ltd. The lifting of the portal frames was given careful consideration so as to obviate any undue lateral distortion, the vertical legs of two frames being first erected whilst the roof portion was lifted into position by slings from four points about 40ft apart, two 5-ton hand cranes were used. Whilst the vertical legs were being erected, the roof girder was assembled in two halves. The assembly took only two days per frame, and the lifting operation was completed in three hours. Following the erection of two frames, the roof trusses were then hoisted into position by hand, longitudinal ties, bracing members and glazing purlins are then fixed by hand.

Erection of the complete structure was completed by a staff of eighteen men in thirteen weeks.

Foundations

The portal frame bases are secured to the reinforced concrete foundation blocks by means of four 2in diameter bolts.

Restraint against the spreading of the foundation blocks due to horizontal thrust was provided by the introduction of 18in × 18in prestressed concrete tie beams, using the "Freyssinet" system.

	Weights	
	Aluminium	*Other Materials*
	tons	*tons*
Structural Sections...	106	—
Plate	40	—
Sheeting	10	—
Roof Decking ...	40	125
Glazing	4	28
Lining	—	11
Steel Components ...	—	31
	200	195

Total Weight 395 tons.
Weight per sq. ft. 12½ lb.

Architects: James M. Monro & Son.

Consulting Engineer for Foundations: J. Bak, B.Sc., M.I.Struct.E.

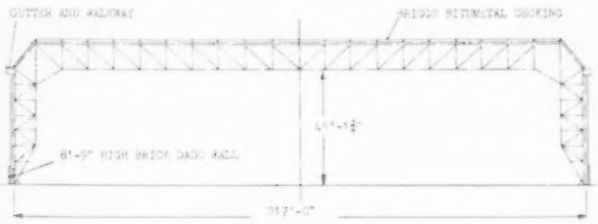
Consultant on Materials: Fulmer Research Institute.

Quantity Surveyors: A. L. Currie and Brown.

Main Structural Contractors: Structural and Mechanical Development Engineers, Ltd.

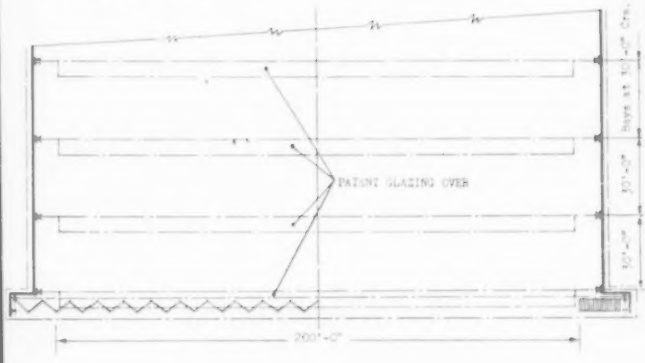
Sub-contractors

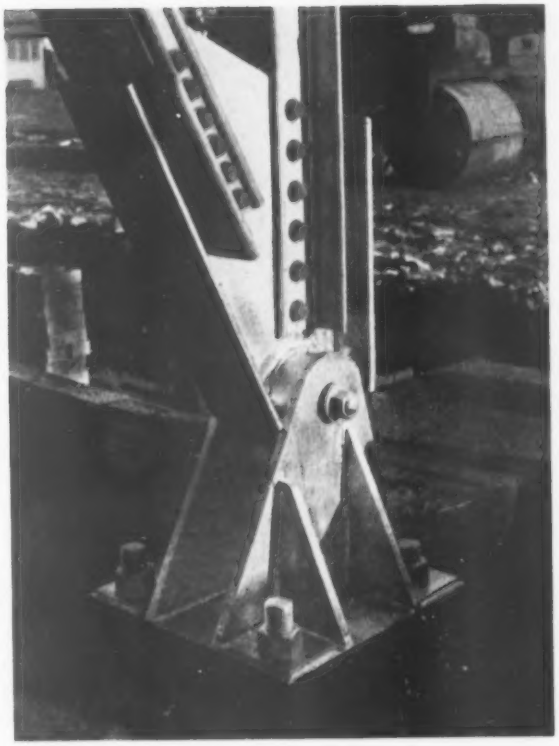
Erection: Carter-Horseley (Engineers), Ltd.
Foundations: Gilbert Ash, Limited.
Aluminium Structural Sections: Southern Forge, Ltd., and T.I. Aluminium, Ltd.
Corrugated Aluminium Sheeting: British Aluminium Co., Ltd.
Doors: Esavian, Limited.
Roofing: William Briggs & Sons, Ltd.
Insulation: Eastwoods Specialists, Ltd.
Glazing: Helliwells, Ltd.
Apron Flashings: The Warwick Production Co., Ltd.



Section

Part Plan

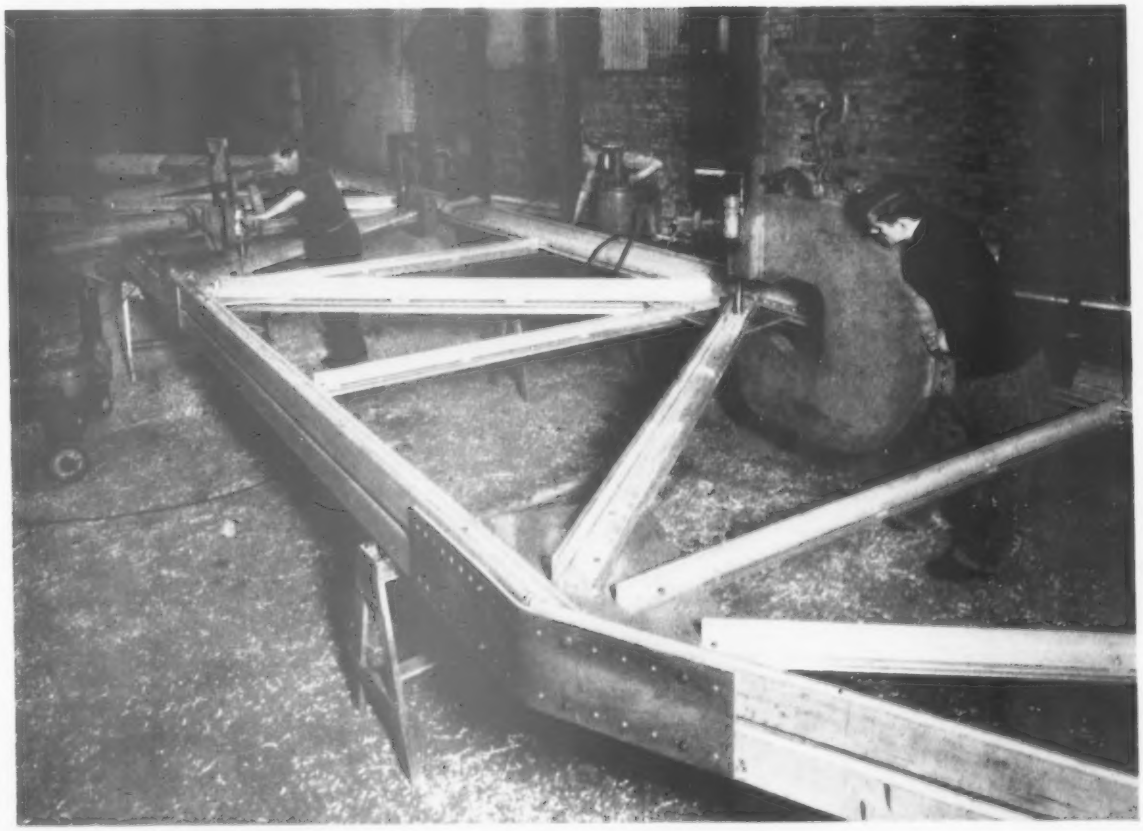




Portal frame base plate

ALUMINIUM HANGAR AT HATFIELD

Portal frame being fabricated in the shop



The main entrance to the administration wing with Assembly Hall behind. Classrooms are to left: dining hall and kitchen block to right.

TANNERS BROOK SCHOOL

for the County Borough of Southampton

architects: OSWALD P. MILNE, F.R.I.B.A.

SITE PLAN

TANNERS BROOK is a growing suburb to the South-West of Southampton. On this School site of 7½ acres, two Schools (Infants and Juniors) are to be built. The Infants School for 360 children (here illustrated) is the first to be erected and was opened by the Duke of Wellington in 1951, and at present it is being used for both infants and juniors. The layout of the two Schools has been contrived so as to make attractive elevations to the road whilst obtaining a S.E. aspect for the Classrooms and at the same time leaving a broad space of land for playgrounds, etc. The somewhat dull bungalow aspect that infants schools are inclined to have, from the need of planning them on one floor, has been broken by raising the administrative block to two floors, the staff common rooms and

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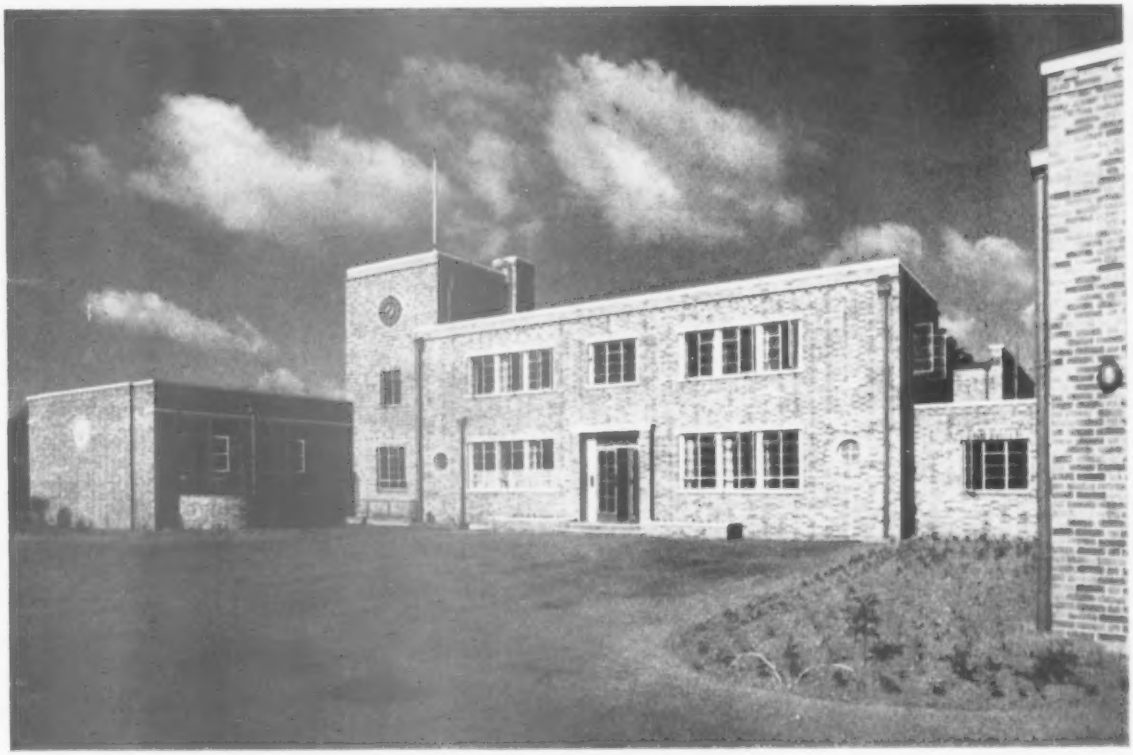
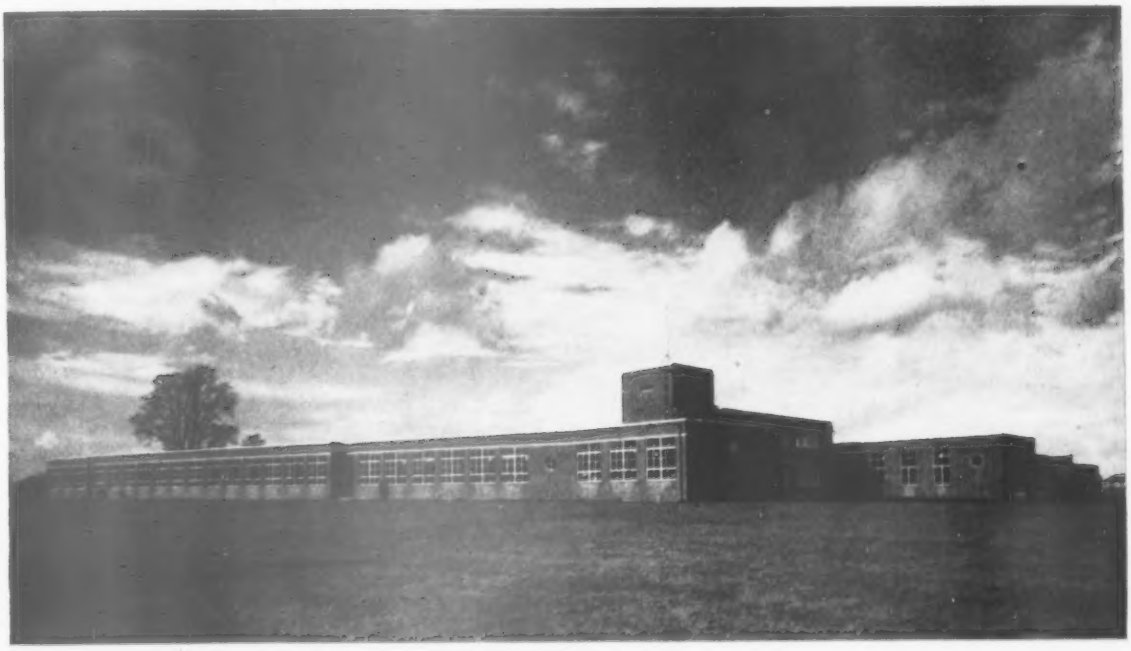
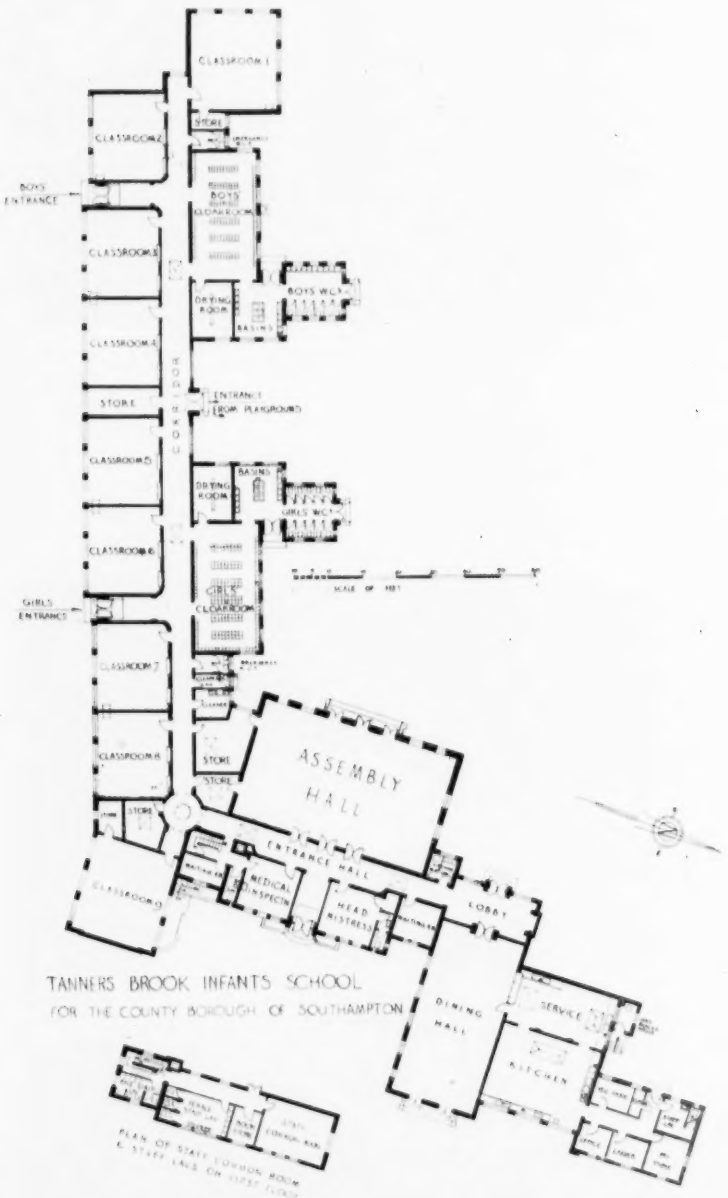


Another view of the Administration block

The view from South-East shows the long front of classroom windows





Continued from page 146

lavatories, etc., being placed on the first floor.

The building is of normal construction with load bearing brick walls which carry the steel joists bearing the precast concrete beams forming the roof. The multi-coloured facing bricks from the neighbourhood are of a pleasing appearance.

Precast stone has been used sparingly for dressings and copings, etc. The concrete roofs are covered with 3 layer roofing felt and chippings.

The walls of Hall, Classrooms and Corridors are finished with a cream sand lime brick, but a cement rendered dado is provided in the classrooms and this, painted with the woodwork, gives gaiety to the rooms. Each classroom has its own distinctive colour. The administrative rooms are finished with plaster. The floors of Hall, Classrooms and Dining Room are of hard wood block while the Corridor floors are of granwood and the Cloakrooms, Lavatories, Kitchens, etc., are of quarry tile. Ceilings of fibre board suspended from the precast concrete beams give excellent insulation and acoustic properties. A kitchen which will serve into two dining rooms has been constructed, but as yet only the infants dining room has been built.

The School is centrally heated by low pressure hot water and the boilers for this and further domestic hot water supply are placed in a boiler house below the tower.

The School is equipped with radio diffusion service and Hall and Classrooms are arranged for display of films.

TANNERS BROOK SCHOOL

Quantity Surveyors:
Veale & Sanders

General Contractors:
Tersons Ltd.

Sub-contractors:

Heating and Hot Water: Benham & Sons; *Electrical Installation:* H. C. Taplin & Sons; *Asphalte Tanking:* Limmer & Trinidad Lake Asphalte Co.; *Steelwork:* Aston Construction Co.; *Precast Beams:* Rapid Floors; *Felt Roofing, etc.:* William Briggs & Co.; *Metal Windows:* Williams & Williams; *Wood Block Floors:* Floorwoods Ltd., Horsley Smith & Co.; *Corridor Floors:* Granwood Flooring Co.; *Cloakroom Equipment:* Potter Rax; *Sanitary Fittings and Ironmongery:* W. Dibben; *Insulation Boarding:* Tentest Ltd.; *Artificial Stone:* Croft Granite; *Flagstaff etc.,* J. W. Gray & Sons; *Plymax Partitions:* Venesta; *Coat-of-Arms Plaque:* Southampton School of Art.

MODERN AMERICAN FACTORIES

A Paper read by W. A. ALLEN, B.Arch., A.R.I.B.A., at the Royal Institute of British Architects on January 20

AMERICANS have devoted a great deal of successful thought to industrial production and have established a structure of general ideas and a body of detailed knowledge which are now widely respected and studied. Hand-in-hand with this development, American designers have worked intensively on buildings for industry and have established a similarly firm structure of ideas and practices but, for reasons which are none too clear, their factory developments seem little known outside their own country. At the Building Research Station we have taken an increasing interest in factory design problems, during the past three years, and I was glad to have an opportunity last summer to visit American factories and to spend some time with the principal designers there. I am equally glad to have this opportunity to acknowledge the generous way in which I was received and helped, and to pass on here some picture of the American viewpoint and practice.

Let me begin with a reminder that industry consists broadly either of the processing of materials or the assembly of components, for the picture of design begins right there. At its extreme, processing may itself be the factory, as is largely the case with, for instance, heavy chemical industries such as the refining of oil, where much of the plant is either out-of-doors or only partly enclosed. In a less extreme position on the scale is to be found heavy industry such as steel-making where shelter is definitely required but tends to be markedly tailor-made for the plant and the job. Then a third stage can be envisaged where large machines, such, for instance, as heavy presses, are the rule, or large assemblies such as aircraft. These tend to need heavy-duty buildings with perhaps rather exceptional spans or heights or frames or floor structures. And finally we reach the broad mass of industry, the smaller-scale processing and assembly ranging from the making of motor cars, for example, to the baking of bread and the assembly of radio valves. These seldom require anything very exceptional in the way of span, heights or floor structure, but may often be quite particular about the indoor climate.

The American approach to the design of industrial buildings is interesting initially in the way it is led by the work of the great firms, first Kahn's, then Giffels and Vallet, and Austin's of Cleveland, followed now by a growing group of similarly balanced but generally smaller organizations. The three I have mentioned have staffs ranging in size from about 400 to 850, and comprise—as one would expect—architects, engineers of all kinds, and in one case the design firm also is a contractor, and in another it does production engineering layout. None limit themselves to factories, but these are their special interest. It requires no stretch of credibility to believe that such organizations can acquire a very expert approach to a building type, especially, as in this case, the building type is at the focus of a nation's interest. At the present time the three firms I mentioned are handling between them some £200,000,000 of work annually, the great bulk of it being factories.

To every action there is an equal and opposite reaction, and in this case the reaction to this organizational set-up in design has been a marked growth of expert buying on the part of the big client firms, some of whom have gone to the point of building up a separate firm to buy and maintain their factories. These people are also very expert and exercise a strong influence in the factory market.

Now we come to what is, to me, the most interesting result of all this specialization. One might reasonably have expected that it would lead to closer and closer tailoring of the factory to the job, but it has not. It has gone right in the opposite direction, for despite all the competition between designers and all the diversity of their clients' needs, there has emerged from both sides one conception, and one conception alone, of the type of building needed for the broad mass of industry. This forms the core of American industrial construction to-day, and designers and clients alike depart from it, on the whole, as little and as seldom as possible. The highest practicable degree of adaptability is their defined aim, and the consequence is a single type of building which houses an increasing variety of industry. The only broad exception was said to be the chemical industry, which was excepted because it has—so it is claimed—become so secretive that no one can find out its factory requirements and build good buildings for it.

At first impression this may perhaps seem to some the antithesis of logic, economy and functionalism (to use a now unstylish phrase). But the explanation is simple and seems convincing; adaptability, they say, is in the national interest because it eases the transition from war to peace production and vice versa, thus increasing national strength; and it makes for a better private investment because an adaptable factory will give good working conditions for a long time into the future, or be a more saleable article if a sale is desired. It is not difficult to believe this reasoning to be sound, especially if we cast our minds back to the strains we underwent in our own factories in the early years of the recent war.

And now, with these preliminaries out of the way, and the idea of a basic type of building in our minds, let us take a closer look at the structures themselves.

The chief elements in adaptability as practised at present are adequate height, adequate bay size, a roof system capable of taking reasonable hung loads at any point, a clean floor plan, facilities for good artificial ventilation, often up to full conditioning, and a high uniform level of artificial light. It will perhaps be best if I say something about each of these in turn, and try thus to build up a picture of the factory type as a whole.

The clear height usual below trusses to-day is 18ft. This figure is an increase on immediate post-war practice, and further increases appear to be likely, partly to be able to accommodate light travelling cranes, partly for increasing machinery heights, and partly to make the building more suitable for warehousing, if that becomes necessary. I was told at one large firm that their new buildings are all going up to 30ft in the clear for these reasons, with 40ft as the figure where warehousing is definitely expected.

The plan is usually laid out on a 10ft grid, with a bay size of 40 × 60ft, tending to 40 × 80ft, or 40 × 100ft; I doubt if there will be much pressure to go beyond this size for ordinary purposes. They use flat steel trusses, about 6-8ft deep, and an extremely interesting development—a straw in the wind—is the laying in of stocks of these standard trusses by steel fabricators, so that they can be taken "off the peg" as it were. This saves a great deal of time and trouble for everyone, and is one of the factors that makes possible their common constructional times of four to five months for factories.

The trusses are classified according to the hung loads they are designed to take, which are generally over a range from one to three tons per panel point, or three times this amount per bay. Figures of six to ten tons at each of three points in a truss were mentioned as representing some recent factories.

Adequate bay size, adequate height, and adequate facilities for hung loads are factors in the efficient use of space in a factory. One often wants very high machine population densities, and these may only be practicable if there is considerable freedom to hang loads and little interference from columns. Some very interesting comparisons between the efficiency of old and new space were qpoted to me, one example of which was a firm moving into an area of three-quarters of its former size and able yet to expand production by 50 per cent.

I think it is the case that they use one size of stanchion as far as possible—an "H" section, not an "I"—but I did not fully establish the point. It is the case, however, that there is considerable electrical control gear available and made explicitly to fit the recess down the side of one particular size of "H" column. It is enviably neat, and clearly represents a degree of standardization in stanchion sizing sufficient for a good market to be anticipated.

While we are discussing the frame, I will just sketch in the common cladding system. Walls, up to sill height are usually of brick, or hollow tile with a buff glaze. The hollow tile gives an excellent appearance and is quickly laid. Above the windows external sheeting is usually asbestos, but aluminium is also used now. Internal sheeting is usual, using flat asbestos, and an inch of common thermal insulation is inserted in the cavity. Walls consisting of large precast concrete panels are now being used experimentally by Kahn's and are said to be promising.

The roof consists usually either of sheet

steel units or concrete panels. The steel units are of simple strip, 10 or 20ft long, and turned down at the edges to form a sort of welt. These are spot-welded to the trusses *in situ*.

The concrete tiles, one inch thick, turned down about 4in at the edges, 2ft wide, and spanning between truss centre lines.

In both cases an inch or so of common insulation is laid over the top, and a felt wateproofing laid down. The concrete tiles are popular because with them it is so easy to form a hole in the roof for local modifications, as for instance for supplementary ventilation for heat treatment and other hot processes. Adaptability once again.

Total steelweights of 12-16 lb/sq ft were quoted for light to medium-heavy manufacture. They feel this represents conservative practice, but they are waiting for research to show the way to reductions. Professor J. F. Baker's work at Cambridge is perhaps what they are waiting for.

Small "H" sections are now used for trusses to give neatness, and welding is customary.

Now that we have a picture of the structural system, we ought to look at the planning. Single-storey work is the rule now, on the grounds that horizontal transport has been more highly and economically developed than vertical. The chief elements in the plan are much the same as they are here—an office block (usually two storeys), the toilets and locker rooms, the transformer cages, the restaurant, the main plant and the boiler house. We can ignore the office block for this discussion, but the location of the locker rooms and toilets and restaurant is an interesting problem. One requirement is that none of these should be on the factory floor. Another is that toilets should be within 2 minutes walk of all working areas. A third is that they should not be below ground, where supervision becomes more difficult. On the whole, American designers have tried to keep the whole floor area clear for the owner right up to the bottom chord of the trusses, and this has led to a trend to put locker rooms, toilets and transformers into the depth of the trusses, just below the roof. Since this is not always easy to arrange, there have been occasional uses of penthouses for this purpose. This is simpler for planning, but means a great height to reach a toilet, and the height is, of course, increasing. A third course is the one that seems most likely to survive, which is to put toilets, lockers and transformers and often the restaurant on mezzanines. This leaves the owner his floor space clear, and is a reasonable compromise in other respects.

While we are on this question of planning I should like to mention some points about entrance design which interested me. As I visited successive factories I became increasingly aware that entrance lobbies were given a lot of attention and that they shared certain characteristics. They were much of a size, about 25 or 30ft square and 15 to 20ft high. They had good, and often magnificent, floors, good modern carpets and furniture, attractive indoor planting and splendid curtains. At a strategic point there would be an efficient-looking control desk with an efficient and very presentable receptioness in control.

In my innocence I presumed all this was to impress the visitor, and no doubt this is often the main intention; but it is not always so. As you probably know, it is quite a common practice in America to have one entrance only for management, personnel and visitors alike, and where this is the case it has been noticed that a good entrance had a very good effect on factory housekeeping. Apparently the men cannot cross a well-designed room of this size, especially over a fine floor, and pass the receptioness as well, without feeling that dirty shoes, dirty clothing, and bad behaviour generally is out of place. This has its effect on them inside the factory itself, and there is evidence from some firms that it has a good effect on conditions at home as well.

Caterpillar Tractor Co., Peoria, Ill., by Giffels and Vallet, Inc., L. Rossetti. A typical factory without top glass but retaining side glazing.

There is nothing surprising about this, of course, when you consider it, and it is happening on this side of the water, too. We are told that it is the case at Gibberd's Appleby-Frodingham mills, and something of the same sort has happened at Hervey Rhodes' modernized woollen mills, in Yorkshire. I have not seen a British entrance fully developed in the American manner, however, except at Bryn Mawr; and I do not recall a receptioness there. I suspect her of being an important element.

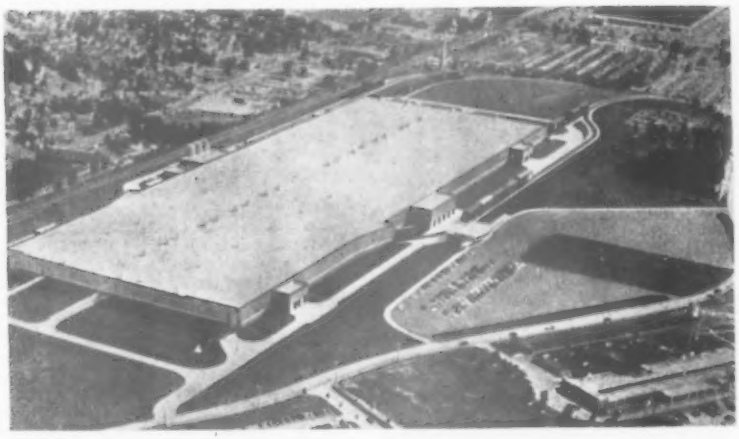
And now back to adaptability, and to their highly interesting and controversial approach to lighting.

Natural lighting from the roof is attempted less and less. The history of its decline runs somewhat as follows. North lighting was abandoned 25 or 30 years ago because it was difficult to ventilate and the directionality of the lighting created serious working difficulties, as we, too, sometimes find. They went over to the monitor, which reduced the directional effect but gave uneven and inefficient lighting the way they did it. With our knowledge of prediction techniques we can fully control distribution and improve efficiency to some extent, but Americans have not developed the design of daylighting very far, and the defects of their natural lighting created receptive conditions for good fluorescent lighting which now is run 100 per cent of the time regardless of whether there is daylight or not. Then wartime experience of black-out factories without roof lighting showed that the artificial lighting was acceptable by itself, and that if the money saved on capital and maintenance costs of monitors (some 10 per cent of total factory costs) were put into good artificial ventilation, the net result was much better working conditions. Now the benefits of good artificial ventilation are so convincing, and the difficulties of natural ventilation are so great with high and wide factories, that the use of monitors for this purpose has become difficult to defend.

This in turn means that there will be so much overhead ducting that appreciable obstruction will be caused to daylighting if it is attempted from roof glass. Since further obstruction is caused by the mass of fluorescent fittings, by the toilets and locker rooms and transformer cages, and by the steelwork, roof glass as a source of daylight readily loses a lot of its potential values. Its defence is attempted on grounds of psychological benefit or of fuel saving, but the evidence for the latter is not yet forthcoming, while the evidence for the former is uncertain, and the case, if any, may be for a luxury rather than a necessity. It is recognized quite clearly, however, that the smaller the factory the more likely it is that the natural agencies will be best and cheapest.

All this is not the same as the case for the completely windowless plant, which is defended by some but by no means all designers and clients. Americans have experimented, as we have, with window walls and with vision-strip fenestration. The former has of course failed; it admitted so much solar heat and caused so much glare that it gave rise to the production of special blue anti-sun glass, but this was so expensive and opaque that it was pointless to go on with the window-wall. On the other hand, the vision strip, about 6ft from sill to lintol, can have what are loosely called psychological effects of relief even in the middle of a factory 500ft square, and I believe this to be the policy that will survive and become standard. In addition, we at the Building Research Station think that if further so-called psychological benefits of this kind are needed, the best way to get them may be by dropping a planted patio into the factory at intervals, with glass all around it.

It was surprising to find, with this tendency to rely on artificial light, that the quality of artificial lighting was poor. Its quantity, at uniform levels of 35ft candles or so, was very satisfying, of course, but not



Lincoln Electric Co., Cleveland, designed and built by Austin's of Cleveland; one of the latest and probably the best of the entirely windowless factories. A two-storey office block lies inside on the short axis; a tunnel goes through on the long axis, with toilets, lockers, power and cafeteria to either side. Photo from Arch. Forum.

once did I see in a working area any direct light allowed to reach the ceiling, though an upward proportion of $\frac{1}{10}$ to $\frac{1}{3}$ has been a common recommendation both here and in America in recent years. The lighting people deplore this, but clients have been curiously impregnable to advice in the fear that they were losing something. Fortunately it has now been found that if fittings are perforated to allow a proportion of upward light, the better ventilation of the units keeps them so much cleaner, and lets the lamps operate so much cooler that there is usually no appreciable loss of operating efficiency as compared with conventional direct fittings, and the visual benefits are thus obtained more-or-less for nothing. This is a very interesting and probably influential finding.

Fluorescent lighting is in twin-tube fittings in substantially continuous rows at 10ft intervals. A search for cheap suspension is on, and the cheapest I heard about was the use of $\frac{1}{4}$in steel cable tightly stretched across the bottom chords of the trusses; these cables were termed "messengers," and could receive fittings direct without noticeable sag. The cheapest wiring was said to be done inside a cavity along the crown of the fitting. A life of up to 7,000 hours was said to be regularly obtained with some modern lamps.

Filament lighting seemed rare, except for deep-drawn internally silvered lamps, which were used to punch light down where there was a high population density of machinery. These gave considerable glare, but of course stay clean. They are prone to fracture if water drops on them, so they need a shade of some kind.

High-powered mercury vapour lamps with supplementary filament lighting were common in high bays, where the wages to riggers made it necessary to restrict severely the number of units to be fixed. The glare was shocking. The unpleasant colour was relieved by the filament lights which fortunately are rendered necessary by the fact that these mercury vapour lamps take a long time to return to full-light if turned off, as for instance by a momentary power failure. But unions support the mixture on grounds of better colour. The illumination had nevertheless some of the dreariness one usually associates with mercury vapour lighting. The really interesting thing to see was the uniform and relatively strong illumination, which is taking the place of the various levels illumination related to the visual difficulty of the task.

If the poor quality of the artificial lighting was a surprise in factories with an artificial climate, an even greater surprise was the almost total absence of colour. Two tones of grey-green with occasional touches of cream were thought to be fairly described as "colour in industry." In this respect the good British factory seems to be a long way ahead of its American counterpart.

Artificial ventilation is of course the established practice; it is not always done, but those who do not do it usually regret it in the summer. Common practice is to design for 4 to 7 summer air changes, or about 2 cfm/sq ft, and to reduce this to about 1 to $1\frac{1}{2}$ fresh air changes per hour in winter, with recirculation of up to 75 per cent of the total air, thus utilizing the remainder of the capacity of the fans. The air may be brought in through the side of the factory and the push applied there, or through the roof, with the plant in a monitor or penthouse, or in the depth of the trusses. Sometimes an external trunk or monitor is used for the main distribution at low speed and secondaries are then taken down into the roof space, though the whole lot can be fitted into the roof space and seemed to me a preferable practice because it avoided the cost of an upstand. Smaller trunking and high speeds are used sometimes with the whole lot in the roof space, but the noise problem then becomes considerable. Whichever of these alternatives is used, the outlets are usually arranged at one per bay, usually at truss level. Then there will be power extractors located between the inlets, and suitably powered to leave the building slightly pressurized by the incoming air, after allowing for extraction at special pressures.

Distribution has been given much thought because it has been found, as one would expect, that if men have no natural ventilation in summer, there must be a real swirl of air to produce an acceptable alternative condition. In winter, however, uniformity must be provided, and the unions are said to be especially watchful for this. So the anemostats or outlets are tending to be designed for a hard downward squirt in summer, and a wider, gentler winter distribution.

Since they have the artificial ventilation plant, heating is naturally done by warming the circulated air; no radiant heating was seen. Cooling is said to be becoming common, but humidifying and filtering are still unusual, though filtering is perhaps fairly widely accepted.

The most ingenious and the most seemingly sensible plant I heard of was a standardized set of units, assembled in pairs on platforms which were then hoisted to the roof and coupled to the ducts. Each set had space for five components, fan, heater, cooler, filter and humidifier, the unnecessary components being omitted and replaced by spacers until wanted by some change of manufacture.

All big doors, and the periphery of the factory are commonly protected by supplementary warmers, thermostatically controlled to drop a hot curtain whenever necessary, as is sometimes done here.

Most of the big factories seem to provide supplementary power to their fans to run at half-speed (which requires $\frac{1}{8}$th power) in case of air attack.

Some precise data on ventilation practice may be of interest. Giffels and Vallet, probably the largest firm specializing in factories, design to air velocities of 2,700ft/min to keep duct sizes down and to avoid multiplying intake plant; they can serve about 20 bays with a standard fun set-up of 78,750 cfm capacity. One plant seen had velocities of 2,200-2,400 ft/min and regretted this because of the noise; but this was an early windowless plant, built about 20 years ago, and high velocity design is now much improved. Nevertheless some clients insist on velocities as low as 300 ft/min.

One apparently fairly typical group of operating criteria was noted:

Summer: 95°F outside, 80°F inside (dry bulb).

Summer: 75°F outside, 67°F inside (wet bulb).

Winter: 0°F outside, 70°F inside (dry bulb).

Relative humidity was intended to be constant at 50 per cent.

One firm said that relative humidity was varied from 30 per cent in winter to 60 per cent in summer, with dry bulb temperatures indoors not more than 10° below the figure outdoors, to avoid thermal shock.

I have said nothing about power, and could not attempt a detailed record. It was obvious, however, that no fixed view had been reached as between overhead and floor supply to machines, though the primary cable is always below ground to reduce risk of damage from fire. On the whole, overhead supply to machines was preferred for flexibility, fed from substations designed to supply areas of 200-300ft square. Floor distribution is only attempted if wood-block floors are available to facilitate changes (which are constantly going on in American factories); but wood-block floors are more expensive and dirty than concrete, and are by no means customary despite their softness and kindness to dropped tools. And even where these floors are used, the overhead bus duct, with its advantage of flexibility, is liked. It adds to the complexity of the scene, unfortunately, by its forest of feeds, but its greater flexibility keeps it ahead of floor distribution.

The only other point of detail I want to record is the almost-standard use of sprinklers, which take the place of all other fire precautions.

This completes my picture of what is, so far as I can judge, the norm of American factory design. It is no doubt subject to considerable variation in prac-

tice, but this is no cause for surprise; it does not pay to make a thing of this kind so adaptable that it covers every conceivable need. The surprising thing is that in practice the departures are so small and so few, for there is no doubt that this norm comprises the bulk of work done by the big designers, and that they can use it everywhere almost from the arctic circle to the equator.

Perhaps another surprising thing, when one thinks about it, is that this form of building, now explicitly the main standby of the industry of probably the most productive nation on earth, is—so far as I know—not yet represented by a single, fully representative specimen in this country, or at most by one or two; this, to me, is so interesting that I would like to take a few minutes to consider what lessons for us there may be in the American work.

First of all, I do not think we should have any doubt about aiming for adaptability; our inheritance of low-grade working conditions, and the strains to which they were subjected by black-outs in the recent war seem to me to be evidence entirely on the side of this principle.

Harder questions arise if we consider particular ways of providing adaptability, but I offer the following line of thought for consideration.

First there is this question of natural lighting. We have been accustomed to attach a lot of importance to it, but how important is it? We operate multi-storey factories without top light; we operate vast numbers of factories with glass so dirty that it hardly counts as glass; and we have large numbers of people working in department stores where there is no daylight at all. And I have seen one completely windowless factory in Britain where I think daylight would have given worse rather than better conditions. I think we may sometimes over-value it for some purposes therefore. I am distinguishing between toplight for illumination and side windows for a view, of course; I think the case for the latter is very strong, and I am not going to question it.

The American designers' view about top-lights is, as I have said, that they are more trouble than they are worth for the medium and large plant, and that an increasing proportion, now about half of their clients, now agree. But we cannot take this entirely at face value, for Americans use factory sash in place of patent glazing bars, and sash need more maintenance, which is one of the things they complain about. Also, they never learnt to handle their daylighting efficiently.

On the question of cheapness, I do not know how to add up the score yet. Daylight saves some electricity, but in modern industry, visual requirements are so exacting that daylight is often inadequate, so it does not do away with the need for artificial light. In any case electricity economy is offset to some extent, and perhaps substantially, by the additional heating and sometimes cooling loads, resulting from roof glazing. Capital costs are not much affected, for you cannot economize in artificial lighting plant merely because you have daylight part of the time. I rather suspect that in this country the economic argument might come down slightly on the side of daylighting, but I would not be sure.

Then, too, I think one must keep an eye on wartime conditions. This is when factories must operate at highest efficiency, and unless peacetime conditions are geared to an easy blackout, then the tendency is for wartime working conditions

Gottsche-Schleisner, Jamaica, N.Y. U.S.A.

Works entrance to one of the Johnson and Johnson factories, Metuchen, N.J., by Fellheimer & Wagner An incentive to cleanliness.

to deteriorate. It was the coastal black-out factories in America that convinced their owners that money spent on good artificial light and ventilation, was better spent than the same money on monitors.

I am suspicious too about the amount of obstruction which occurs often due merely to steelwork, walkways, overhead gear and high machinery. I have seen roof lighting reduced to a token only by such things, and then I am sure it is not worth its cost, at least for illumination. But these admittedly are extremes, though I fear they may be trends, and that adaptability may add to the trend. I am sorry to labour this point, but it is very important and I am trying to help without being misleading.

Ventilation, of course, plays a part in the argument. Natural ventilation is adequate for quite a considerable proportion of industry, but rising demands of dimensional exactness and cleanliness are steadily increasing the need for artificial ventilation. In America this need has gone farther than here, and is added to by climatic extremes, but a considerable number of British factories now use general ventilation, and some degree of air conditioning, and, of course, local ventilation for many processes is standard. It seems to me that when a case for artificial ventilation is made out, the case for natural roof lighting tends to diminish appreciably, for the ventilation plant also can do much obstruction, and then the glazing adds to both the heating and cooling loads.

As a last word on this particular point let me say that if and when roof daylighting is used, it should at least be designed in relation to indoor cleaning gear which makes possible frequent cleaning. Gibberd's built-in trolleys at Appleby-Frodingham's are a good answer, and I do not really think glass that cannot be cleaned frequently is worth very much to anybody. Once every month or two is the sort of thing I mean.

To the Americans, adaptability (and economy) practically rules out reinforced concrete, and especially the shell forms of this construction. There are substantial difficulties we all know about for daylighting with these forms and for ventilation, but the key thing to the American designer or client is the lack of facilities for hung loads, and the intractability of the system when you want to cut holes in the roof for ventilation and other modifications. The architectural pleasures of shells are often spoilt by overhead gear, too, but the alternative location in the floor usually is more expensive. I do not know answers to these criticisms, and I think we ought to examine this trend carefully, at least so far as the common run of factory is concerned. No doubt there is a firm case for it in some circumstances.

Cost is something that is so difficult to discuss in general terms that I have avoided it on the whole, but there is one point I think should be mentioned. We are often told that economy is essential, and designs are sometimes stripped to the bone. Is this desirable? As far as I can see from the figures available to us, the average factory represents, in capital costs, something like 3-5 per cent of total production costs, and American figures are only slightly higher. If this is the case, it seems very easy to urge economy unwisely, for the difference between bare necessities and good working conditions are then so small a proportion of costs that they could scarcely fail to be recovered in increased productivity. The important point, of course, is to know what improvements in conditions can influence productivity.

May I ask you, finally, to consider what new direction, if any, we should now take? My own feeling runs somewhat thus; that we should press for the standardization and stocking of clean, economic, adaptable and attractive steelwork; that we should ask for adaptable ventilation plant along the American lines I described, co-ordinated with the steelwork. No doubt we should have monitors available to us when needed. And we should standardize in a way that facilitates the supply and fixing of good standardized lighting and power gear. I should like to see an effort made to devise reinforced concrete designs to give adaptability, for they can have the merits of cleaner design and lowered maintenance costs. And then I think we should aim to increase in every way studies of industrial technology, because a sound policy of industrial building design can be one of our best contributions to national productive efficiency.

National Joint Council Meeting

The National Joint Council for the Building Industry met on January 14 and carried out the annual review of wages under its Constitution. The Council found that an increase of 2d per hour becomes due to operate on February 2 in accordance with the Sliding Scale based on the Retail Prices Index.

The Council heard evidence on a number of claims. These included an application from the Operatives for a further general wage increase of 6d per hour and for various allowances under the Working Rules, and an application from the Employers for rearrangement of working hours as between summer and winter, having regard to hours of daylight and summer weather.

Having heard the evidence the Council adjourned to enable both sides to examine it; a further meeting of the Council is to be convened within a fortnight.

Office Routine

THE following words appeared in a recent letter to the Editor, which was shown to me, on the subject of some staff's abysmal ignorance of office working: "The newcomer—in my day—was left in complete ignorance of how an office worked. I was six years a draughtsman before I knew what a letter file was!"

I believe this statement could be echoed in varying degrees by many of the architects trained in well-known schools of architecture; in my view, this points to a training need which, on the whole, is conspicuously missing from the syllabus of schools, although fully appreciated by those trained in smaller offices. Especially is this type of training needed in order to bring home to the student the fact that, however well trained he may be in design and construction, it is essential he knows the rudiments of running an office in an efficient manner. Students for the R.I.B.A. final, or exemption from it, have to take an examination in professional practice and are expected to have completed a period of office routine, but I doubt very much that the lecture syllabus for professional practice examination or a period in a fairly large office does, in fact, provide the basic training needed to appreciate the essentials of office routine.

I have no doubt that those who work as assistants in small offices obtain a fairly full knowledge of the office routine of the individual office, but if this does not happen to be an efficient system, and it is not explained clearly, little real knowledge is acquired. Furthermore, even in small offices, as in large ones, the assistant is unlikely to see the detailed working of some portions of the office work such as the book-keeping and handling of accounts.

The correspondent mentioned in the opening paragraph accompanied his letter by a duplicated copy of a document giving a five-page explanation of his firm's office routine instructions. This document is handed to every newcomer to the office, whether an assistant or a typist. This is a most excellent statement of good office practice and I am sure, if read in conjunction with the files, record forms, etc., to which reference is made, it should make clear the full procedure and routine of the office. I know there are a number of offices about the country with office instructions of this nature, but I feel there are, none the less, many more offices in which the staff have to learn the routine, which is almost always slightly different to that to which one has been accustomed in other offices, by trial and error methods, leading, on occasions, to quite unnecessary trouble.

I regret that space does not permit of reproduction of this office routine document as I am sure it would be found helpful to very many offices as it contains many useful "tips" on management of drawing offices and on filing systems.

As I, like many architects, have worked in a number of offices, I find it most interesting to look back at the variations in office systems adopted or, in certain cases, the virtual absence of system. One fact of which I am now quite certain is that those offices having efficient systems are usually the same as the ones who give their clients an efficient job and very often, but alas not always, a well-designed job. I am quite sure that we as a profession can no longer tolerate in the building industry architects of a type, such as one for whom I worked, whose filing system consisted of one basket into which were placed all incoming letters and all copies of all outgoing letters (if any were by chance made) regardless of the many jobs to which they referred and when the basket was full the contents were tied up with string and put in the basement!!! To find a drawing or an instruction in that office was a miracle.

I do not suggest that there is a need for nor that there could be a standard office routine for all architects' offices of any given size, but there should be, in each office, an efficient system, the workings of which are understood and operated by all so that all parts of the office are kept in step, documents of all types are available for rapid reference and the whole organization, whatever its size, can be supervised with the minimum effort.

There is no doubt that the larger the office the greater the need for a system which is clearly understood by those with which it is associated whether it is operated by a private architect or it is an official department. In the medium and small offices I have often heard remarks to the effect that an office system costs money to operate; I would disagree wholeheartedly with such a suggestion as I am certain that a system, on however small a scale, is vital as a time-, money- and "headache"-saver to all parts of the office.

I believe a job reference number to be essential as a basis of any office system. This number should appear on all files, all drawings and all correspondence regardless of the size or nature of the subject. It should be noted I mention files first as I believe the first step in any project or office subject is to start a file in which everything associated with each matter may be recorded. This is well stressed in the office routine document mentioned above, which also stresses the importance of keeping records. Reference is made to diaries which are periodically summarized and transferred to the job files, to recording telephone conversations (and confirming them) and the placing of incoming letters on files so that the person replying has all the previous correspondence available when dictating.

Each aspect of the office routine is covered in these notes. They cover the work of typists and of the drawing office staff from the chief assistant downwards. Precise direction is given as to what is done with incoming and outgoing letters, where copies are filed, the number of copies required, checking off in the shorthand books as letters are typed, etc. Matters of this sort need uniformity within the office. For the drawing office, instructions are given as to who files drawings and where, the numbering of drawings, time records, and expense chits. It is interesting to note the stress laid on the importance of working from prints and not from original drawings. I was also interested to see that it had been considered necessary to give direction as to how to address outgoing correspondence and who has to deal with incoming letters from arrival to the despatch of the reply.

There is also a brief but adequate statement about the office accounts, who handles each type of account and what is expected from the staff to keep the book-keeping in order.

How can this type of information be given to those responsible for starting or bringing up to date architects' offices? I believe there is room for some very specially knowledgeable people with experience of efficient office management to collaborate in the preparation of a book of general guidance which the R.I.B.A. might make available for the guidance of its members. Assistance might well be obtained from the Institute of Management in the development of simple systems and office instructions applicable to various-sized organizations. Office efficiency is just as important to a professional office as it is to a business organization as the one often has the other as a client who will expect similar efficiency as he has in his own field.

DUTCH UNCLE

M.O.W. LECTURES
FEBRUARY

CARDIFF, Tuesday, February 3rd, 7 p.m.
PAINTING TRADITIONAL BUILDING.—Speaker: T. A. Baker, Building Research Station at the Gas Board's Lecture Theatre, John Street, Cardiff.

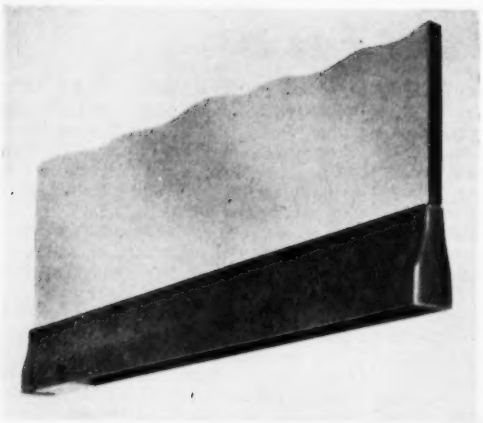
AYLESBURY, Tuesday, February 3rd, 7.15 p.m.
THE BUILDING (SAFETY HEALTH AND WELFARE) REGULATIONS, 1948.—Speaker: R. S. Moffett, at the Aylesbury Technical Institute, Walton Road, Aylesbury.

HUDDERSFIELD, Tuesday, February 3rd, 7.15 p.m.
DAMPNESS IN BUILDINGS.—Speaker: A. G. Day, Building Research Station, at the Technical College, Queen Street South, Huddersfield.

BURNLEY, Tuesday, February 3rd, 7.15 p.m.
THE USE AND MAINTENANCE OF BUILDERS' PLANT.—Speaker: J. A. Truman, Plant Engineer, A. Monk & Co., Ltd., at the Municipal College, Burnley.

WALSALL, Wednesday, February 4th, 7.15 p.m.
HARDWOODS FOR BUILDING.—Speaker: B. J. Rendle, Forest Products Research Laboratory, at the Technical College, Bradford Place, Walsall.

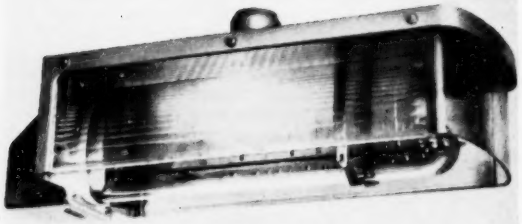
TOTTENHAM, Wednesday, February 4th, 7.30 p.m.
GOOD PRACTICE IN DOMESTIC DRAINAGE.—Speaker: F. J. Crabb, Building Research Station, at the Polytechnic, High Road, Tottenham.



STRUCTURE
DOORS
A11/4.

A new type fitting for "Armourplate" glass doors. This fitting will now be supplied as standard.

The bulge at the heel which was a feature of the previous fitting is now eliminated. The new fitting is the same for both top and bottom rails and an important point is that floor springs are interchangeable. Fixing instructions are the same for old type and new fittings.



SERVICES
LIGHTING
B1/62

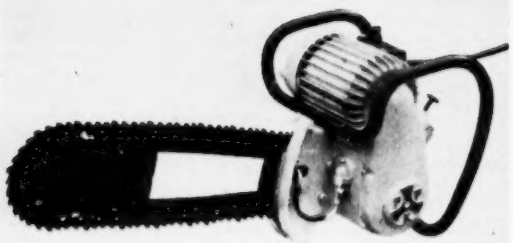
This refractor lantern for Group A road lighting was shown for the first time at the Association of Public Lighting Engineers Conference in Harrogate last year.

The lantern has top entry screwed either 1in. or 1¼in B.S.P.

Provision is made to prevent moisture affecting the lamp.

Combination of aluminium alloy and "Perspex" and the open bottom makes these lanterns exceptionally light.

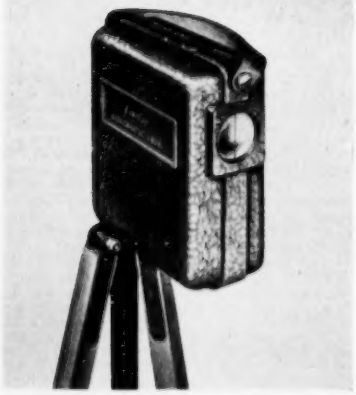
The open bottom makes for clearer refraction and less cleaning.



PLANT & TOOLS
SITE GEAR ETC.
E2/7.

Site gear may be a misleading heading under which to classify this stone saw which is only one—a small one—of a new range of electrically driven saws which can be used for speedy and accurate cutting of large or small blocks of stone.

Lightness and ease of handling by one man in this case or by two for larger models are features of these neatly designed instruments.



PLANT & TOOLS
SITE GEAR
E2/8.

A new level for builders and others requiring a simple, accurate instrument.

This level is automatic and operation is claimed to be foolproof, thus unskilled men can use the level. Accuracy is said to be better than ¼in in 100 feet. The range is up to 150ft.

The level weighs less than 4½lb. Production of these instruments has started and the cost is far less than that of the better-known types. The cost is £16. The level needs no special setting up.

MOSAICS

The names and addresses of manufacturers of any item illustrated in MOSAICS, together with more detailed information relating to their products—including price and availability—will be forwarded to readers on request.

Letters should quote the serial number and be addressed to :

The Editor,
The Architect and Building News,
Dorset House,
Stamford Street, S.E.1.

Please mark the envelope MOSAICS.

INDUSTRIAL NOTES

For the fifth successive year total deliveries of cement in the home and export markets have set up new records.

The 1952 figures for home trade show an increase of over one million tons (12.3 per cent). The totals for the last three years are as follows: 1950, 7,808,000 tons; 1951, 8,145,000 tons; 1952, 9,147,000 tons.

1952 was the first year of freedom from price control in the home market. During the year the Industry not only absorbed the increases in costs of production, but lowered its prices.

Exports also made a new record at 2,055,000 tons—an increase of 4 per cent over 1951.

In conformity with the policy of the Industry, new capacity of some ½ m. tons will be available in 1953 and a still larger production in 1954.

* * *

The recent lectures on Woodworm and Dry Rot given by Dr. N. E. Hickin, F.R.E.S., at the Rentokil Woodworm and Dry Rot Centre, 23, Bedford Square, London, W.C.1, have proved so popular that a further series has had to be arranged. These are again being given at the Centre every Monday evening at 6 p.m. from January 26 and continuing until March 30, 1953. Admittance to these lectures is free, but is by ticket on application. Rentokil are glad to welcome visitors to these lectures who may have specific or general problems on Woodworm and Dry Rot.

* * *

Glow-Worm Boilers, Ltd., have engaged the services of Mr. T. E. Green, 40, Longley Lane, Northenden, Manchester ('phone No. Wythenshawe 2679) as their representative for the counties of Lancashire, Westmorland and Cumberland.

* * *

The Coronation B.I.F. will be held from April 27 to May 8. Five months before the doors open the position at Castle Bromwich now is that 96 per cent of all space indoors has been sold. Bookings for the outdoor section are piling up.

The President of the Birmingham Chamber of Commerce, Mr. A. B. Waring, and his Management Committee estimate that more than 1,200 firms will have their latest goods on show in April in the three heavier industrial sections (Engineering, Electrical and Building) and in the Hardware group. Special Coronation Year décor will make the 1953 Fair visually the most attractive that has ever been held.

The Studio Window

BY EDWARD ARDIZZONE

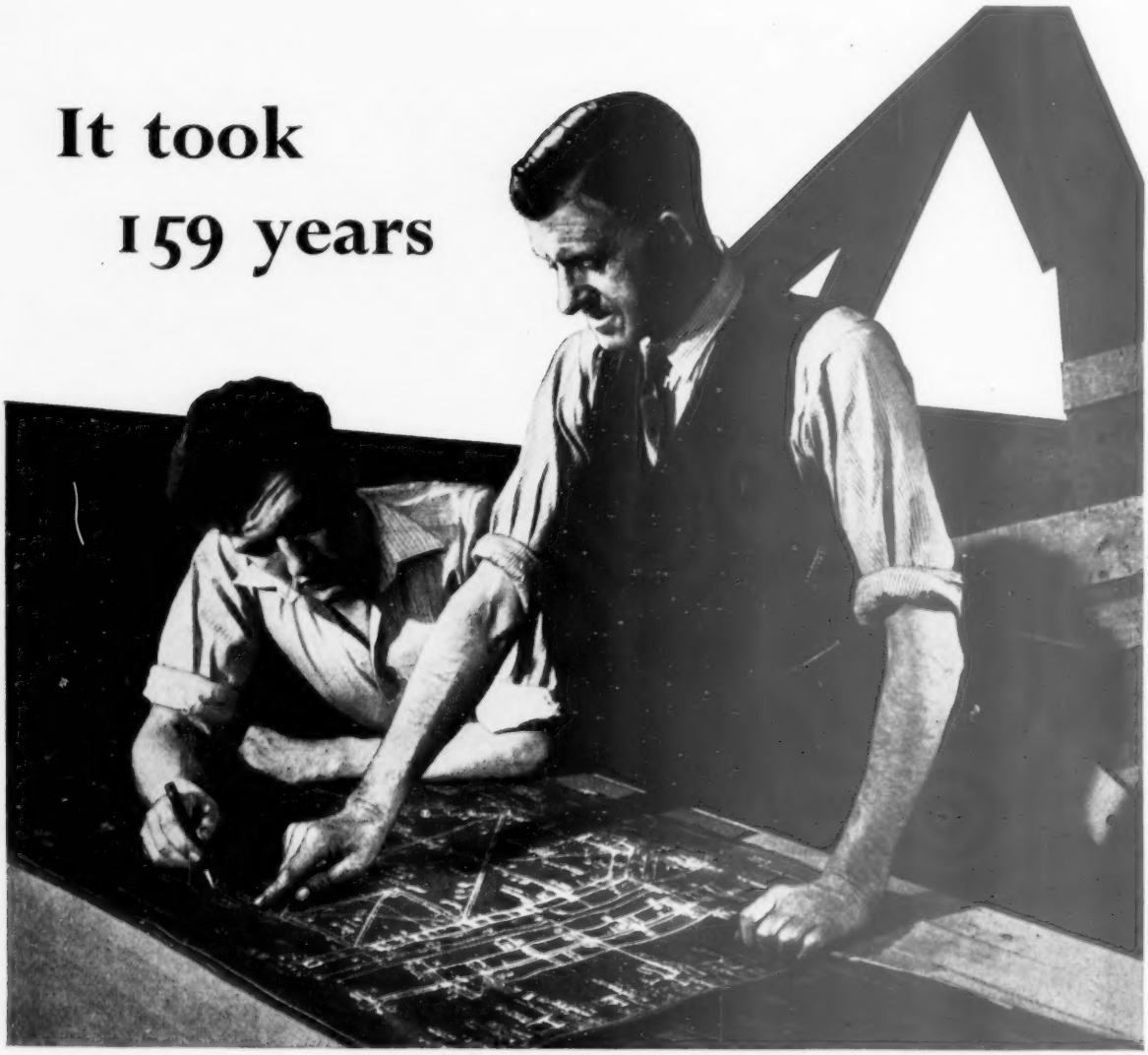
A large window with a north light is an essential for all painters. The technique of metal window construction, working on traditional lines, is ideal for such 'purpose-made' windows. Crittalls can provide a solution for all contemporary window problems.

CRITTALL WINDOWS

THE CRITTALL MANUFACTURING COMPANY LIMITED

BRAINTREE, ESSEX. TEL: BRAINTREE 106, AND 210 HIGH HOLBORN, W.C.1. TEL: HOLBORN 6612

It took 159 years



A blueprint is studied. Youth is guided by experience in the preparation of engineering templates, as it is guided in every other field of activity at Newton Chambers. For seven generations men have passed on their skill and recorded their knowledge, and in this way have helped to make Newton Chambers the thriving industrial community it is today. *At Newton Chambers every present-day development rests on the sure foundation of hard-won experience.*

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& COMPANY LIMITED, THORNCLIFFE, SHEFFIELD

HEAVY CONSTRUCTIONAL ENGINEERING, EXCAVATORS, INDUSTRIAL AND DOMESTIC HEATING APPLIANCES, FUEL ECONOMISERS, IZAL AND OTHER CHEMICAL PRODUCTS.

CURRENT MEASURED RATES (LONDON)

These apply to new work of normal character and some size. The rates are for time and materials only, and carry 10 per cent in excess, so the appropriate essential on-costs should be added. The basis cost of material used in the calculation of these prices is taken from the foregoing tables which carried up to the 1st of January, 1953.

ESSENTIAL ON-COSTS

Fees payable to L.C.C. for District Surveyor :	
For new buildings of ordinary construction exceeding 5,000 cubic feet, for every 1,000 feet or part of same up to 1,000,000 cubic feet 1/6, together with an additional sum of £1/10/- ..	£1/10/- *at* + 1/6
After which allow per 1,000 do.	at + 9*d.*
For alterations and additions :	
When £100 the sum of £2/10/-, plus 12/6 for every £100 or part of same, up to £1,000 ..	£2/10/- *at* + 12/6 per 100
When over £1,000 the sum of £8/2/6, and for every £100 or part of same beyond 3/-	£8/2/6 *at* +3/-per 100
Public buildings : Fees as above but plus 50% ..	+ 50%
Fees in respect of means of escape in case of fire are 1/5th of the above or £2 if greater or in the case of a one-storey building £1	1/5th
Steel framed or r.c. buildings double	+ 2

Allowance to cover National Insurances, Holidays with Pay and Public Holidays, Welfare, Third Party Risk, Travelling and Guaranteed Week is made in the rates attached to the items.	
Allow for Fire Insurance do.	⅛%
Allow for Water for use on the works and apparatus do.	¼%
Allow for hoarding, or similar licences in City of London say	£10
Do. under Borough Councils per ex month .. .. say	2/6
Allow for Office, Fire, Attendance on C. or W. etc., p. week say	£1

Supervision, etc. assessment Contract value	£4,000	£6,000	£12,000	£24,000	£50,000
Cost of admin. ..	6%	5%	5%	4½%	4½%
Agent or foreman (each)	5%	4½%	3½%	2½%	1½%
Timekeeper or Watchman (each) ..	2½%	2½%	1½%	1%	¾%

SPOT ITEMS AND DEMOLITION, ETC.

	Per foot run
Hoarding erected and removed	15/-
Planked gangway with handrail, etc. do.	8/-
Proper gantry .. do.	60/-
Sleeper roadways	12/6
Needling, strutting and shoring including all labours and use and waste in erection and removal ..	Per foot cube 15/-
Breaking up and removing hard masses of concrete or brickwork, etc., found in foundations	Per yard cube 50/-

ALTERATION-DEMOLITION—	1 Brick Per	1½ Brick foot	2 Brick super	Per yard Cube
Cutting out cement concrete or brickwork in small quantities	1/1	2/-	2/10	50/-
Do. if either in very small quantities or reinforced	1/8	3/2	4/5	73/-
Debris into baskets and removed from inside to outside of bldg.	3½*d.*	5½*d.*	7½*d.*	10/6

SCAFFOLDING

Per Yard superficial	Period— 1 month	3 months	5 months
Putlog type—4′ 6″ lift	3/6	5/4	7/2
Do. —6′ 0″ do.	2/9	4/3	5/9
Independent type—4′ 6″ lift ..	4/7	7/4	10/7
Do. —6′ 0″ do. ..	3/6	5/7	7/8

EXCAVATION

Per Yard Cube. *By hand*	Common Soil	Loam and Clay	Stiff Clay	Hard Gravel
Reduce levels	4/3	4/3	5/5	7/-
Surface trench	7/4	8/10	11/7	12/4
Barrow 25 yds.	2/2	2/10	3/3	2/2
Fill and ram	3/10	4/3	4/8	3/10
Load and cart	12/8	12/11	13/5	12/8
By machine				
Bulk dig and load	2/10	3/2	3/8	3/8
Lorry standing while loading and 5 miles travel to tip ..	5/-	5/6	6/9	6/2
1 extra mile to tip	7*d.*	7½*d.*	8½*d.*	7½*d.*

CONCRETE

1½in Ballast Aggregate	Per yard cube
1 : 3 : 6 Cement concrete in foundations	65/-
Do. around grillages	67/-

REINFORCED CONCRETE

1 : 2 : 4—¾in. concrete, worked around reinforcement, between formwork in the following (at various levels) :—

Foundations and surface beds	73/-	Per cubic
Walls, 12ins thick or more	78/-	Yard

Sectional inches.	Lintols and beams.	Columns and casings.	Braces and projections.	
Up to 36	3/11	4/2	4/4	Per cubic ft.
36 to 72	3/8	4/-	3/9	do.
72 to 144	3/6	3/7	3/9	do.
over 144	3/4	3/6	3/8	do.
Walls 6ins thick			15/-	Per super yard
Do. 9ins thick			21/6	do.
Suspended floors average 6ins thick ..			15/10	do.

REINFORCING RODS (round) bent and placed— Per cwt	½in	⅝in	¾in	⅞ to 1in
In floors and beams ..	68/-	63/-	59/-	53/-
In walls	74/-	68/-	62/-	56/-
In columns	80/-	73/-	67/-	60/-

FORMWORK and Supports (4 times use)— Floor soffits	Beams.	Walls.	Columns.
15/10 per Yard.	2/1	1/11	2/- per super foot.

BRICKWORK

BRICKWORK per YARD superficial reduced to ONE BRICK in thickness (scaffold to add)—	In 1 : 3 cement mortar.
Flettons or other similar *at* 108/- per 1,000 ..	34/6
Mild Stocks or do., *at* 213/- per 1,000	47/6
Second Stocks or do., *at* 244/- per 1,000 ..	50/8
Southwater engineering or similar bricks, *at* 313/- per 1,000	62/-
Blue Staffordshire wire cut *at* 439/6 per 1,000 ..	75/6
Deduct if 1 : 1 : 6 Cement-Lime mortar is used in lieu of 1 : 3 Portland Cement mortar	2*d.*
Add if brickwork commences above ground level	3/-
Do. if in backing to masonry including cutting and waste for bonding	2/6
Do. If circular-on-plan	6/-
Do. If in underpinning	6/-

BRICKWORK IN THICKNESS NOT REDUCED— Per yard superficial.	Brick, on edge walls.	Half-Brick walls.	1 Brick finished fair both sides.	11″ Hollow with 2″ cavity and G.I. tics.
In Flettons or similar ..	14/9	18/10	34/6	41/6
In second stocks or do. ..	20/6	27/-	50/8	56/-
Add : for pointing as work proceeds, per side	1/3	1/3	1/3	1/3
Thicknessing to old walls, including cutting, toothing and bonding to same an average total thickness of ¾ brick		46/- Fletton	58/- Stock	Per yard super.
Do. all as last but an average total thickness of 1¼ bricks ..		63/-	83/-	do.

WALLS BUILT IN SUPERIOR BRICKS— In 1 : 3 Cement mortar, fair faced and pointed on both sides as the work proceeds :—	Half-Brick	One Brick	
In first quality Stocks at 260/- ..	30/4	55/-	Per yard
In red facings at 280/-	31/-	55/-	super.
In bluepressed facings at 486/6 ..	44/8	82/11	do.

GENERAL AND SUNDRY—		
Cut tooth and bond new brickwork to old		3/9 per ft
Damp proof course, double slate, horizontal ..		2/6 super
Do., as last, but vertical		3/2 do.
Do., bitumen, Hessian base, do.		1/- do.
Frames, bed and point in cement mortar, one side 4*d.* per ft. run		
Window board of 6″ × 6″ × ⅞″ rounded on edge quarry tiles, bedded, pointed, cut and fitted ..		2/6 do.
Terra cotta air bricks built in and pointed, including flue	9″ × 6″ 4/6	9″ × 9″ 7/6 each.
Chimney pots, plain red, set and flaunched in cement mortar ..	1ft high 11/9	2ft high 17/6 each
Metal windows, assembled, hoisted and fixed, lugs cut and pinned and frames bedded and pointed one side in cement mortar ..	Up to 5ft super. 8/10 10ft to 20ft super. 17/6	5ft to 10ft super. 11/3 each 20ft to 40ft super. 31/- each
Leaving holes through walls for pipes and afterwards making good	Small pipes 3*d.* per in in depth	Large pipes 6*d.* per in in depth
Cutting do., and afterwards do. ..	9*d.* do.	1/6 do.
Cut mortices in brickwork or concrete for bolts or dowels and run in with cement grout		1/- per in in depth, each
Holdfasts of stout hoop iron bent holed and screwed to frame and built in ..		1/- each

MEASURED RATES—*Continued*

BRICKWORK—*Continued*

FACING—

Extra only over common brickwork (108/– per 1,000) for facing with superior bricks in *Flemish bond* and pointing as the work proceeds.

Rustic Flettons (133/–)	3/1½ per yard super.
White (180/–)	6/11 do.
First Stocks (260/–)	12/4 do.
Reds (280/–)	13/10 do.
Blue pressed (486/6)	29/– do.

If built in English bond, *Add* 10% to above.
If do. half-brick stretcher bond, *Less* 25% off above.

COPING—

All labour and material in forming brick-on-edge coping with two courses of roofing tiles under and cement weather fillets on both sides, built in cement and pointed as the work proceeds.

Per foot run	9″ thick	14″ thick
In picked Flettons	5/6	7/9
In first quality Stocks	6/7	9/6
In red facings	6/7	9/6

Plumbing angles	2*d.* per foot run
Fair cutting	9*d.* do.
Fair raking cutting	1/3 do.
Fair circular cutting	1/3 do.
Fair squint or birdsmouth	1/6 do.

ARCHES

Extra over Fletton brickwork for forming window head with red facing bricks set on end and with 4½″ soffits and pointing	foot run 2/6
Do. for rubbed and gauged flat arch in red rubbers set in putty with fine joints	foot super 15/–

PARTITIONS

(over 100 Yards)	Per yard super— 2in	2½in	3in
Concrete slab partitions in cement mortar	8/6	9/8	10/10
Hollow terra-cotta, do.	10/8	11/6	12/8
Cutting and bonding at angles, intersections and ends	4*d.* foot run.		

PAVING	1in	1¼in	1½in	
Grano trowelled gauged 5 : 2	6/9	8/2	9/7	yard super
1×5in skirting, square top and cove bottom			2/–	foot run
¼in×6in red quarry tile paving			24/–	yard super
¼in×6in do. skirting			1/6	foot run
Jointless flooring, ¼in thick			20/–	yard super

ASPHALTE (normal conditions and fair quantity)

¾in pitch mastic floor in one coat on felt underlay on prepared concrete base — B.S. 1450/48 Black: 10/9 per yard super; B.S. 1375/47 Brown: 11/10; B.S. 1375/47 Red: 12/8

	Unit	Mastic B.S.988	Natural Rock B.S.S. 1162/44
¾in in two thicknesses on felt underlay on prepared concrete base	yard super	14/–	19/–
Ditto in narrow widths	foot super	1/9	2/4
¾in skirting 6in high, angle fillet at bottom splayed and turned in at top	foot run	2/–	2/3
External angles	each	4½*d.*	4½*d.*
Internal *ditto*	each	8*d.*	8*d.*
Tanking or Damp Course		B.S.1097/43	B.S.1418/47
Vertical in two thicknesses	yard super	18/–	23/6
¾in horizontal *ditto*	yard super	12/–	18/6
Vertical in three thicknesses	yard super	23/–	31/–
1¼in horizontal *ditto*	yard super	17/8	28/–
Labour rounded external angle	per foot run	4*d.*	4*d.*
Ditto internal angle fillet	per foot run	7*d.*	7*d.*
Ditto double *ditto*	per foot run	1/1	1/1
Collars to small pipes	each	2/8	3/2
Ditto to large pipes	each	4/9	5/6

DRAINAGE

Excavate trench, and plank and strut to sides, consolidate bottom to fall, return fill and ram earth after drain is laid, and load and remove surplus. In ordinary ground — moderately firm.

Per lineal yard	
1 foot in depth	3/10
2 do.	6/6
3 do.	16/4
4 do.	21/8
5 do.	27/–
6 do.	34/3
7 do.	41/9
8 do.	52/11
9 do.	61/6
10 do.	68/–
11 do.	84/9
12 do.	95/5

Portland cement concrete (1 : 6) bed under drain pipes and benching up on both sides—6″ thick

Per yard run	4in.	6in.	9in.
	18in wide	20in wide	23in wide
	5/6	6/5	8/–

SALT GLAZED SANITARY DRAIN PIPES
and lay and joint with Yarn and Cement Mortar in trench.

Quality	Quantity	Per foot run 4in	6in	9in
" Best "	2 Tons or more	2/4	3/5	5/8
	over 100 pieces	2/6	3/9	6/2
	under 100 ditto	2/7	3/11	6/5
" Best Tested "	2 Tons or more	2/11	4/3	7/3
	over 100 pieces	3/3	4/11	8/–
	under 100 ditto	3/4	5/–	8/5
" British Standard "	2 Tons or more	2/6	3/9	6/2
	over 100 pieces	2/9	4/–	6/8
	under 100 ditto	2/10	4/2	7/–
" British Standard Tested "	2 Tons or more	3/1	4/7	7/8
	over 100 pieces	3/4	5/–	8/5
	under 100 ditto	3/6	5/3	8/10
Extra for bends " Best "—Contained in 2 Ton lots.		3/8	5/5	15/4
Extra for junction " Best "—4in on 4in, 6in on 6in—9in on 9in)	ditto.	5/9	8/5	25/–

IRON DRAIN PIPES—

Heavy cast iron socketed and laying and jointing in molten lead—	Per foot run 4in	6in
In main runs	9/–	13/6
In branches	9/5	13/11
	each	
Extra over last for bends and extra joint	30/–	51/–
Do. on do. for junctions and extra joint	41/–	73/–
Cast iron gulley with 10½in. inlet and 4in outlet, composed of hooper and trap, and 9in extension piece and 10½in grating, and jointing all together, and jointing to drain and surrounding in concrete	110/–	—
Do. rain water shoe with vertical inlet and inspection cover, and joint up and embed	51/–	100/–

MANHOLE SUNDRIES—		4in	6in
Salt glazed straight half-round main channels	each	5/–	7/–
Do. curved	do.	10/6	15/–
Do. three-quarter section splayed channel bends (Barrons or similar)	do.	13/9	19/10
Heavy manhole steps galvanized	do.	9/6	—
Fix only manhole covers	do.	8/–	—
4in Mica flap, brass faced, f.a.i. valves and fix with molten lead joint	do.	30/–	—

ROOFER

CORRUGATED ASBESTOS SHEETS

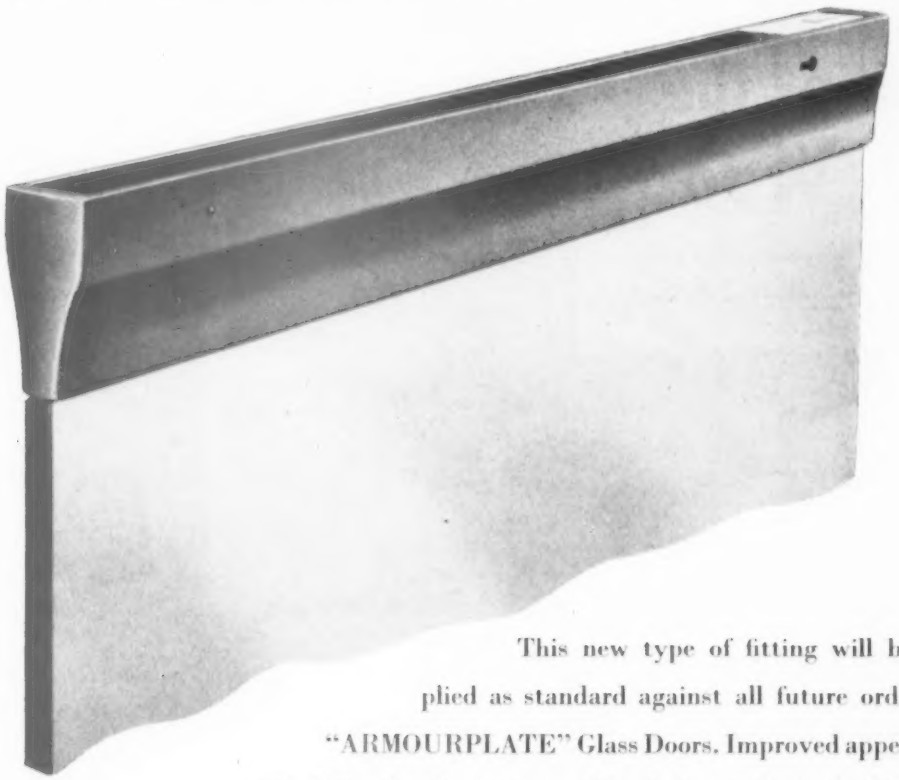
P.C. 5/8 per super yard, including side and end laps and fixing to wood	115/– per square
Eaves filler pieces	1/7 foot run
Adjustable ridge	2/11 do.
Barge boards	2/3 do.
Plain roofing tiles, machine-made, sand faced, 4in gauge nailed every 4th course with 1½in galvanized nails, to battens (measured separately)	194/– do.
Extra over last for top edge or abutment cutting	1/– do.
Do. for double course at eaves	1/10 do.
Do. for verges, undercloak, bed and point	2/6 do.
Do. Valley tiles including cutting and waste on both sides	9/– do.
Do. Bonnet hips and do. bed and point	10/– do.
Half-round ridge and bed and point	2/6 do.
Fixing soakers	1/3 dozen

Bituminous felt roofing in two layers, laid breaking joint and bedded with hot mastic and finished with fine dry grit	8/6 yard
Do. but in one layer only	6/4 super.

WELSH SLATING—	Per square 12″×10″	18″×10″	20″×10″
3in lap, 2 zinc nails to each slate	240/–	260/–	297/–

Additional labours—	Per foot lineal		
At tops, verges and abutments—straight	1/2½	1/3½	1/6
Do. —raking	1/9	1/11	2/3
At hips and valleys (each side)	1/9	1/11	2/3
At eaves, double course	1/11	2/5	2/9
Do. to falls	2/8	2/11	3/3

Announcing
NEW TYPE FITTINGS for
Pilkington's "ARMOURPLATE" Glass Doors



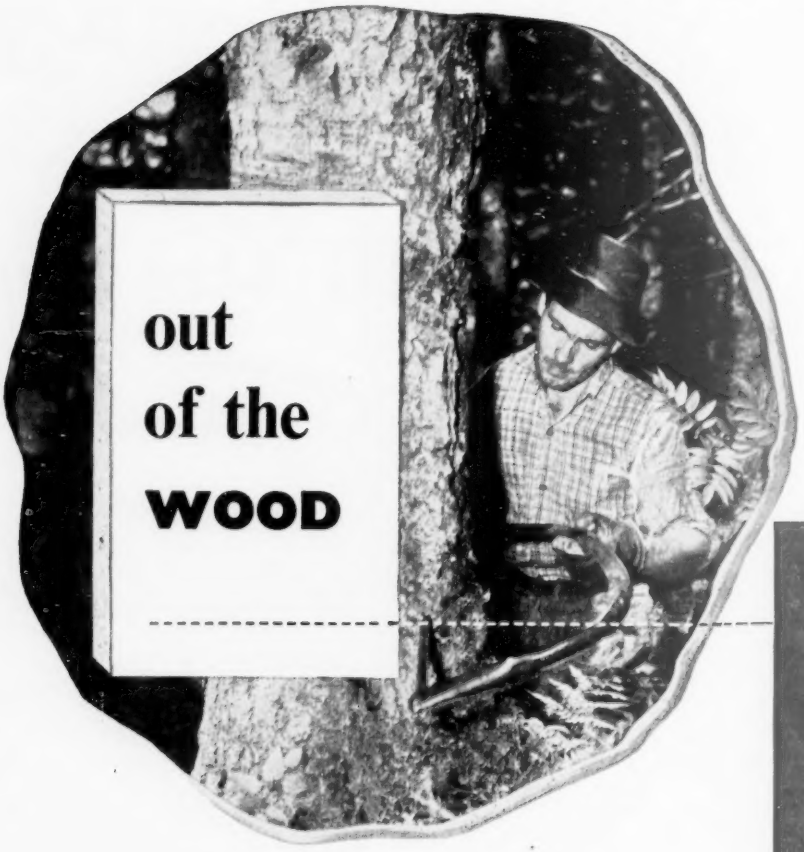
This new type of fitting will be supplied as standard against all future orders for "ARMOURPLATE" Glass Doors. Improved appearance results from the elimination of the bulge at the heel of the previous fittings and floor springs are interchangeable. The new shape, which is continuous throughout its length, is the same for both top and bottom rails.

- **The same variety of finishes is available**
- **The fitting embodies a four-lever lock**
- **Current fixing instructions apply**

PILKINGTON BROTHERS LIMITED

Consult the Technical Sales and Service Department at St. Helens, Lancs., or Selwyn House, Cleveland Row, St. James's, London, S.W.1 Telephones: St. Helens 4001, Whitehall 5672-6.

Supplies are available through the usual trade channels. *"ARMOURPLATE" is the registered trade mark of Pilkington Brothers Ltd.*



into LLOYD board

When Bowaters make a building board they take a tree. They separate its millions of fibres, purify and pulp them, heat and compress them into homogeneous sheets of uniform strength and thickness. These boards have the obvious merits of being knot-free and grainless . . . and the less obvious merits of resisting condensation, cold and heat, so that they are ideal for insulation purposes as well as for constructional and decorating work. And of course, they're wood—all through.

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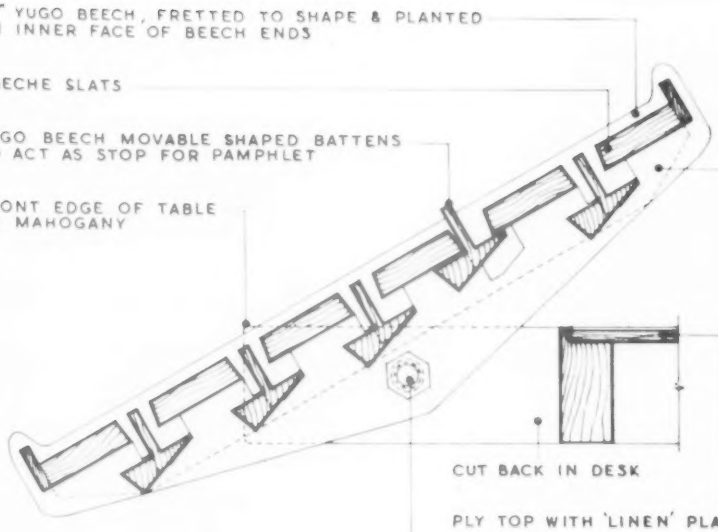
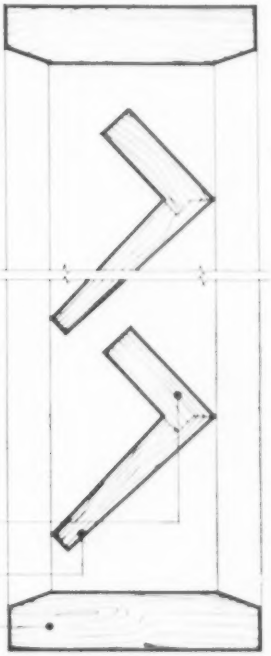


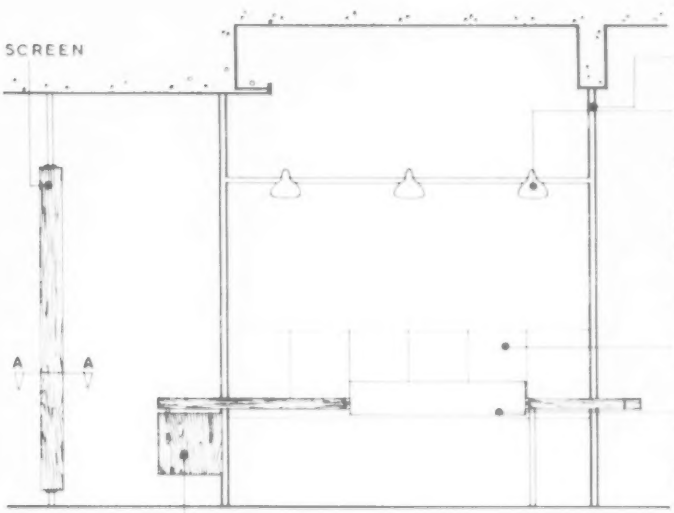
SECTION THROUGH PAMPHLET RACK

SCALE: 3" = 1'0"

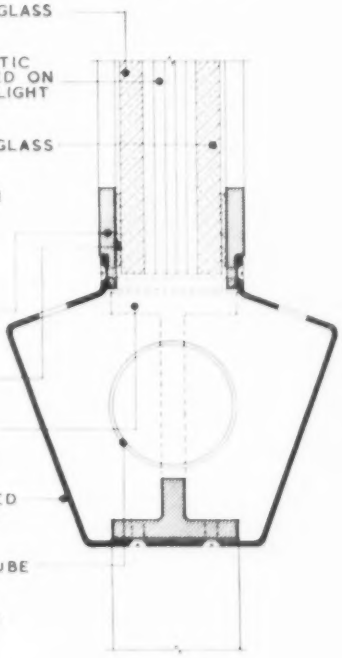


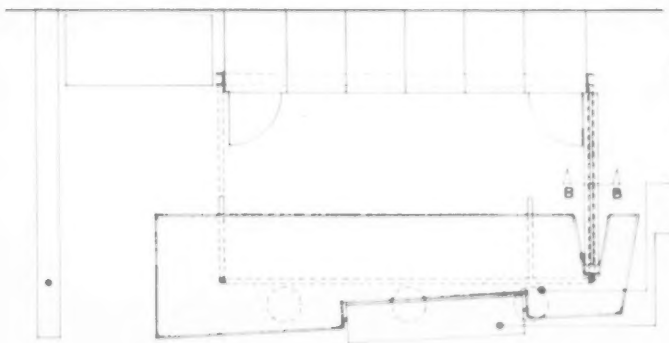
PART PLAN OF SCREEN AT A-A

SCALE: 3" = 1'0"



ELEVATION



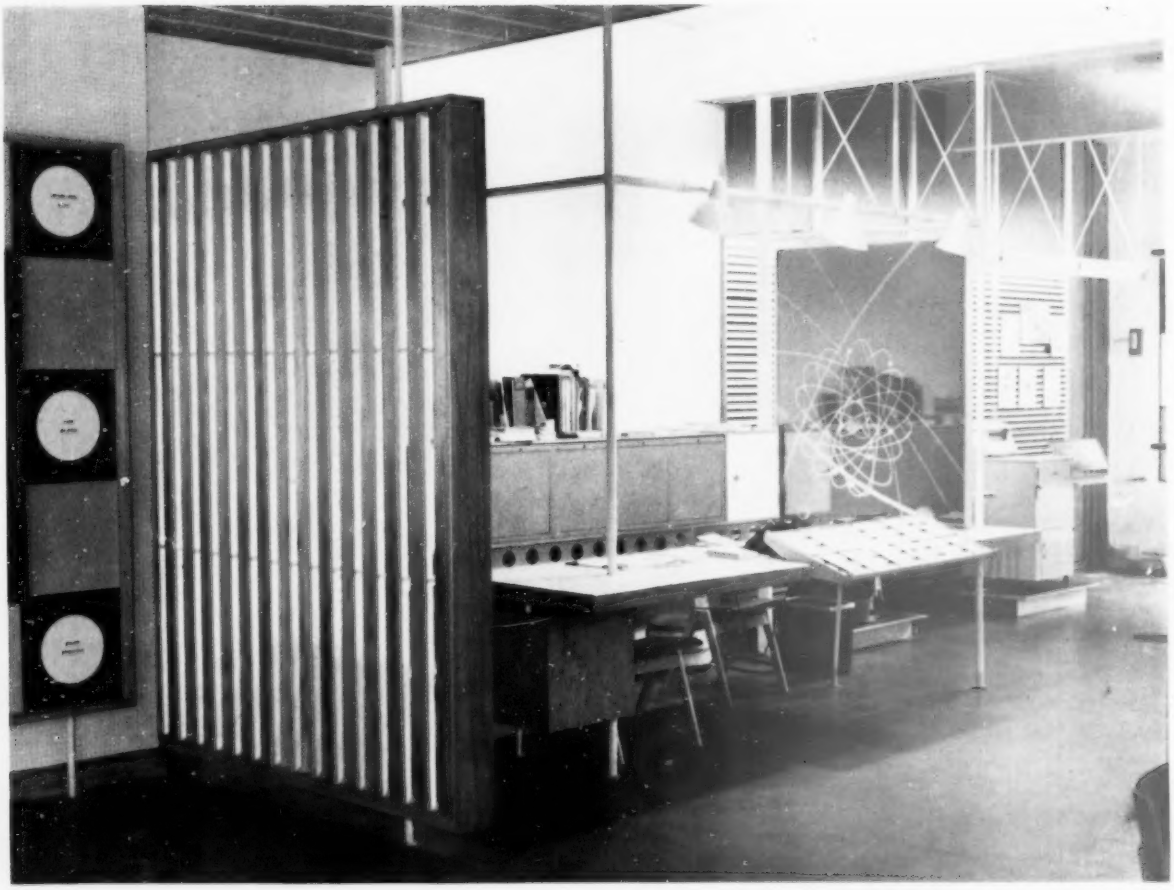


PLAN

SCALE: 1" = 4'0"

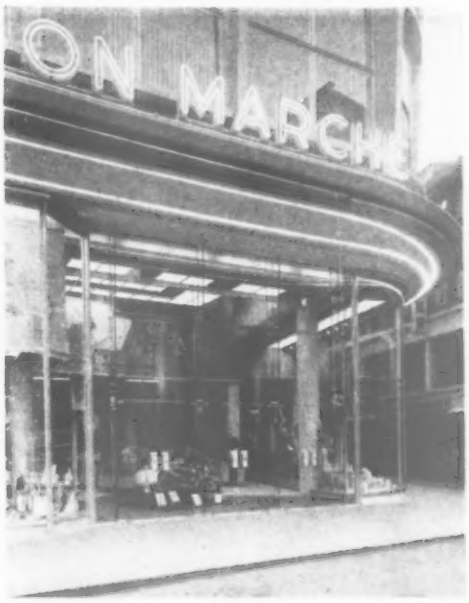
SECTION B - B AT BASE OF MURAL

SCALE: 1/2 FULL SIZE



ELECTRICAL INFORMATION DESK, THE BUILDING CENTRE

DESIGNER: HULME CHADWICK



CONTEMPORARY SHOPFITTING IN **LIEGE**

THESE illustrations shew views of the new Liege store of the S.A. Des Grands Magasins "Au Bon Marche," Etablissements Vaxelaire-Claes, the shop-fronts, entrance doors and canopy of which were constructed by the Sage Organisation to the designs and under the supervision of the Architect—Mons. G. Dedoyard, Liege.

A portfolio of recent examples of Sage craftsmanship in metal and wood will be sent free on request.

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MEASURED RATES—*Continued*

FLOORS AND FLATS

Hollow tile in situ or precast units hoisted, bedded and fixed—

Superimposed load in lb per foot super.	Span 12 feet	Span 16 feet
50 ..	39/6	43/6
Per yard super. 100 ..	40/6	46/–
150 ..	43/–	49/–

20lb has been allowed to cover dead load in surface finish.
Fair edge to slabs .. .. 6*d.* per foot run
Splay cutting and waste .. .. .. 1/6 do.

CARPENTER AND JOINER

SOFTWOOD CARCASSING— per foot cube—

	Plates	Joists	Rafters	Trusses
Labour, materials, waste nails, hoisting and fixing ..	17/–	18/–	19/6	22/–

FLOORING— Per square—

	¾in	1in	1¼in
Rough boarding	122/–	152/–	186/–
Softwood batten flooring, straight joints, splayed headings	124/–	155/–	190/–
Do. grooved and tongued	145/–	179/–	223/–

SKIRTING— Per foot superficial—

	½in	¾in	1in
Wrot softwood moulded skirting with grounds and backings plugged ..	3/2	3/9	4/3
Mitres to do. ..	3*d.* per sectional inch.		
Fitted ends ..	2*d.* do.		

SASHES, Fanlights, casements, borrowed lights, etc.—

Per foot super—	Without bars	With bars (2ft sup. in each square)
2in softwood rebated, moulded and fixed	2/9	4/7
Add if fitted with beads	6*d.*	1/6
Add if hanging on butts	2/- each	

WINDOWS, hung on lines—
Softwood cased frames, 1in inner and outer linings, 1¼in pulley stiles, 2in sashes, oak sill.

Per foot super.	Overall size of frames— 6ft	21ft	32ft	44ft
Window as described	15/6	8/–	6/4	5/–
Add if sashes in squares, about 2 feet super in each	—	1/3	1/7	1/6
Extra for hanging sashes with lines, weights and axle pulleys	each 25/–	42/–	52/–	70/–

FINISHINGS TO OPENINGS— Per foot super—

	¾in	1in	1¼in	1½in
Softwood linings, tongued at angles and tongued to frame including grounds and backings	3/2	3/6	4/3	4/8
Add if crosstongued	6*d.*	6*d.*	6*d.*	6*d.*
Softwood wrot rounded on front edge and with tongue at back window board including groove in sill and bearers	3/1	3/6	4/3	4/9
Add for ends to last notched, returned and rounded	10*d.*	10½*d.*	11*d.*	1/–

Per foot run—	Sectional area in inches— 1	2	3	4	5	6
Softwood wrot and fixed in bearers, backings, grounds, fillets, and similar	3½*d.*	5¾*d.*	7½*d.*	9¾*d.*	11¾*d.*	1/1¾
Add if in short lengths ..	2*d.*	2*d.*	2½*d.*	2½*d.*	3*d.*	3*d.*
,, if plugged to brickwork	4*d.*	4*d.*	4*d.*	4*d.*	4*d.*	4*d.*
,, if framed as in legs and bearers	3*d.*	3*d.*	4*d.*	4*d.*	6*d.*	6*d.*
,, if rebated or grooved or beaded	½*d.*	½*d.*	½*d.*	½*d.*	½*d.*	½*d.*
,, if chamfered or rounded edges			1½*d.*			
,, if moulded in architraves, capping, etc.			3*d.*			

DOOR FRAMES— Per foot run—

Per sectional inch—	6in	8in	10in	12in	13½in
Softwood, wrot, rebated, rounded framed and fixed	1/9	2/1	2/6	2/9	2/11

DOORS—Per foot super.

2in. Softwood, square framed and flat panels, both sides, on butts ..	Number of panels— 1: 4/7	2: 5/6	3: 5/11	4: 6/4	5: 6/7	6: 7/2
1½in do.	4/2	5/–	5/6	5/10	6/1	6/7
Add for each side moulded	4*d.*	5*d.*	6*d.*	7*d.*	8*d.*	9*d.*
Add for do. flush panelled ..	8*d.*	8*d.*	8*d.*	6*d.*	7*d.*	7*d.*

per foot super—	¾in	1in	1¼in	1½in
In shelves, table tops, wrot and fixed	2/1	2/4	2/9	3/4
Do. in divisions and ends framed ..	2/4	2/7	3/–	3/7
Add if crosstongued	6*d.*	6*d.*	6*d.*	6*d.*
Add if buttoned	6*d.*	6*d.*	6*d.*	6*d.*

SUNDRIES—Per foot run

	In short lengths	In long lengths	Add for cups & screws
Glazing beads, mitred around and fixed with brads ..	6*d.*	4*d.*	2*d.*
Rounded heel or hollow ..		4*d.*	
Tongued and grooved angle		6*d.*	
Glue blocking		6*d.*	
Mitres	3*d.*	per sectional inch.	
Fitted ends	2*d.*	do.	

STAIRCASE— Per ft. super

1¼in Softwood treads with moulded nosings. 1in risers tongued both edges and glued, blocked and bracketed on and including two fir framed carriages	4/3
Do. but in winders	5/1
1¼ in. crosstongued landing on framed carriages ..	4/5
2in moulded string	4/3
2in do. ramped	8/6
Ends framed to newel	8/– each
Tongued and mitred angles	4/– do.
Tongued heading joints	4/– do.
Ends of treads and risers housed to string	2/3 do.
Extra for curtail ends to steps, glued up and veneered riser and solid blocking	80/– do.

	1in	1¼in	1½in
Balusters about 2ft 9in long, square and framed each end .. .. .. each	2/8	3/1	3/6
3½in × 3½in square newel, framed	3/3 per foot run		
Mahogany moulded handrail (3in + 2½in) ..	7/– do.		
Do. ramped	12/6 do.		
Do. wreathed	25/– do.		
Ends framed to newels	6/– each		
Joints and handrail screws	8/– each		

FIXING ONLY IRONMONGERY	To deal	To hardwood
Barrel bolts	1/5	2/– each
Flush bolts	3/3	4/– do.
Sash fasteners	1/10	2/4 do.
Rim locks and furniture	4/6	5/6 do.
Mortice locks and do.	8/9	13/6 do.
Cupboard locks	2/3	2/9 do.
Casement fasteners	1/10	2/4 do.
Do. stays	1/10	2/4 do.
Grip handles	2/2	2/9 do.
Spring catches	1/10	2/4 do.
Cabin hooks	1/5	2/– do.
Floor springs including oil	39/–	48/– do.
Overhead springs	11/–	13/– do.
Springhinges	9/–	10/6 do.

SMITH AND FOUNDER

Basis framed steel joists and hoist and fix ..	66/–	per cwt.
Do. but in compound girders	68/–	do.
Do. but in stanchions	75/–	do.
Trusses	90/–	do.

Additional cost per cwt. over basic sections for following R.S.J.s.

9in × 7in ..	3½*d.*	6in × 3in ..	4½*d.* per cwt.
5in × 3in, 10in × 8in, 12in × 8in, 14in × 8in, 16in × 8in, 18in × 6in, 18in × 7in, 20in × 6½in, 20in × 7½in	6½*d.*	do.	
5in × 2½in, 22in × 7in	10*d.*	do.	
4in × 3in, 24in × 7½in	1/1½	do.	
3in × 3in .. 1/4½ cwt. ..	4½in × 1½in ..	2/9	do.
3in × 1½in		3/10½	do.
Bolts and nuts, fitted	130/–	do.	
Forged straps	100/–	do.	
Wrot iron balustrade	215/–	do.	

RAINWATER GOODS—

Round cast-iron pipe with socketed joints caulked with red lead and tow and fixing with pipe nails and gas barrel distance pieces to plugs in brickwork	Per foot lineal 2in: 3/3	3in: 3/9	4in: 4/9
Extra for shoes	4/9	6/–	8/6
Do. junctions	7/–	9/	13/–
Do. bends	5/6	7/	9/6

RAINWATER GUTTERS Per foot run—

	4in	5in	6in
Half round C.I. gutters jointed in red lead and bolted and fixed on iron brackets	3/–	3/7	4/6
Ogee do. All as last	3/4	3/9	4/9
Extra for stop ends	2/10	3/6	3/9
Do. angles or outlets	5/–	6/4	7/6

MEASURED RATES—*Continued*

PLUMBER

EXTERNAL—	Soakers	Flats	Flashings
4lb Milled Sheet lead per cwt.	175/–	204/–	220/–

Per foot run	½in	¾in	1in	1¼in	1½in	2in
Lead main pipe ..	5/8	7/10	10/7	13/3	16/8	22/8
Ditto service *ditto* ..	5/3	6/10	8/9	10/11	13/3	17/10
Ditto waste *ditto* ..	3/9	4/11	6/2	7/5	9/4	11/8
Bends each	—	—	—	1/9	3/–	7/9
Solder joints ,,	7/8	9/6	11/3	13/5	15/11	21/2
Union and joints ,,	12/10	16/5	21/1	28/1	—	—
Stop valve and *ditto* ,,	28/11	37/7	51/10	80/9	—	—
Bib valve and *ditto* ,,	20/8	28/–	—	—	—	—
Ball valve and *ditto* ,,	22/6	31/7	49/5	71/11	—	—
Sleeve and *ditto* ,,	—	—	—	—	21/3	28/9

COPPER TUBES	½in.	¾in.	1in	1¼in	1½in	2in
Tubes per foot run ..	2/7	3/2	4/2	5/–	5/11	8/6
Couplings: straight each	2/11	3/11	5/10	7/9	9/10	13/7
Do. Bends each ..	6/3	7/6	10/8	14/5	22/–	30/6
Do. Tees ,, ..	6/7	7/8	12/–	16/1	22/2	31/7
Do. Cistern ,, ..	4/4	5/10	7/8	9/9	13/7	18/1
Stop cocks ,, ..	23/10	33/6	52/9	93/–	138/–	213/–

BLACK TUBING (Class C.) fixed with pipe brackets	½in	¾in	1in	1¼in	1½in	2in
Tubes, per foot run ..	1/7½	1/11½	2/4½	3/–	3/7	4/9
Bends and fix, each	3/6	4/3	5/2	6/8	8/–	11/7
Tees and ditto	3/8	4/5	5/4	6/10	8/4	12/2
Fire bends	1/2	1/4	1/5	1/8	2/3	4/–

Coated iron (M) weight L.C.C. soil and waste fixed with nails and distance pieces and molten lead joints	2in 4/6	4in 6/8	foot run
Extra only for bends and joint ..	12/7	20/9	each
Do. junctions and joints	14/–	26/–	do.
Do. cleaning doors	16/6	18/–	do.
Domical wire guards	2/4	2/6	do.

PLASTERER—			yard super
Lime and hair	¼″	Render and set	5/2
Do.	⅛″	Ditto float and set	6/6
Sirapite	¼″	Skimming coat	3/6
Do.	⅜″	Render and set	6/9
Do.	⅞″	Render float and ditto ..	8/7
Portland	½″	Backing coat	4/–
Do.	¼″	Plain face	6/9
Do.	¾″	Floor screed	4/4
Keenes	¼″	Skimming coat	4/6
Dubbing	½″	Thick or less	1/9
Metal lathing	⅜″	mesh × 24 Gauge	5/3

6″ × 6″ × ¼″ Earthenware Plain Glazed Tiles, in fair quantity, white, and setting (on prepared screed) .. 35/–
Rounded edge. Extra over last .. .. 3½d. per foot run
Angles in ditto .. .. .. 3½d. each
Cutting and fitting. Around pipes or clips 1/– ditto
Narrow widths. 3″ to 6″ wide. Add 75% to plain surface.
Ditto. 6″ to 12″ ditto. Add 40% to plain surface.
Sundry labours per foot linear :—
Quirk 2½d. Arris 3½d. Fair edge 2½d. Rounded edge 4d.
Flush bead 1/4.
Mouldings—5d. per inch girth.
Jointing new plastering to old 3d.

POLISHING	Foot super	Sashwork Foot run
NEW WORK—		
Staining, bodying-in and French Polish	2/3	1/6
Staining and wax polishing on hardwood	1/–	8*d.*
OLD WORK—		
Cleaning down old work and repolish ..	10*d.*	—
Stripping, preparing and repolishing ..	2/6	1/8

INTERNAL PAINTING

With white lead base in common colours, with brushes.

ON WOOD—	Knot stop and prime	Prime and paint once	Prime and paint twice	Add for each extra coat	
General surfaces ..	2/4	4/7	6/4	1/8	Yard super
Running lengths not exceeding 3″ wide	3½*d.*	6½*d.*	9*d.*	2½*d.*	Yard run
Do. 3″ to 6″ wide ..	5*d.*	9½*d.*	1/–	3½*d.*	do.
Do. 6″ to 9″ wide ..	7½*d.*	1/1½	1/7	5*d.*	do.
Do. 9″ to 12″ wide ..	10½*d.*	1/6	2/–	6½*d.*	do.
Sash square each side	4/11	8/5	11/4	2/11	per doz.
Do. in large squares	7/1	12/–	16/2	3/10	do.
Opening edges ..	7*d.*	1/2	1/9	7*d.*	each
Casement frames each side	4½*d.*	8½*d.*	1/–	3*d.*	Yard run
Mullions or transomes, do. ..	6½*d.*	11½*d.*	1/3	4½*d.*	do.

ON PLASTER—	One coat	Two coats	Three coats	
Paint on surfaces	2/4	4/4	6/–	Per Yard super
Do. on mouldings ..	2/8	5/2	7/–	do.
Do. on enrichment ..	4/6	8/6	11/–	do.
ON STEEL—				
Paint on structural steel ..	2/–	3/9	5/3	do.
Do. on roof trusses ..	3/3	6/4	8/9	do.
Do. on metal windows measured over all on both sides, divided into squares	3/–	5/2	7/3	do.
Do. divided into large squares	2/7	4/5	5/9	do.
Do. divided into extra large squares	2/1	3/8	4/11	do.
Do. on opening edges ..	9¾*d.*	1/5½	1/11	each
Do. on rain water pipe ..	7*d.*	1/3	1/8	Yard run
Do. on do. gutter	1/–	2/1	2/10	do.
Do. on small pipe	2¾*d.*	5½*d.*	8*d.*	do.

GLAZING (to New Work)

Polished Plate Glass ordinary substance (about ⅛in), glazing quality, in the following sizes, glazed complete— Per foot super
In plates not exceeding 2 feet super in each .. 4/9
Do. 5 feet do. .. 5/7
Do. 45 feet do. .. 6/3
Do. 100 feet do. .. 6/8
Add extra price for glazing with screw beads or clips 3*d.* per foot super.
Do. if glazing bedded in washleather or velvet 6*d.* per foot run.

SHEET GLASS glazed, complete, per foot super, in new work :	24 oz	26 oz	32 oz
Ordinary quality clear glazed to wood with putty in areas of 100 feet super in the aggregate	1/9½	1/11½	2/2½
Do. 200 feet do.	1/7¾	1/9½	2/0½
Do. 500 feet do.	1/6	1/8½	1/11¼
Figured rolled and Cathedral, glazed to wood with putty in 100 foot super areas in aggregate. (White.)	Per foot super	(⅛in.)	1/11¼
Do. in standard tints	do.		2/7½
Fluted, glazed do.	do.		2/3½
Reeded (narrow, broad, etc.) do. ..	do.		2/3¾
Reedlyte do.	do.		2/3¾
Spotlyte do.	do.		2/2¾
¼in Rough cast do.	do.		2/2½
¼in Do. wired do.	do.		2/3½
¼in Georgian Rough Cast do. ..	do.		2/4

Add for glazing all as before but to steel to similar work as above, 2*d.* per superficial foot.

PAINTER AND DECORATOR

DISTEMPERING—In common colours, put on with brushes—
ON PREPARED SURFACE.

per yard super—	1 coat (finish)	2 coats (undercoat and finish)	*Add* if required for Sealing coat	Stippling
Ordinary distemper on flat surface of plaster	7*d.*	1/1	5*d.*	2*d.*
Washable do. on do. of plaster	10*d.*	1/6	5*d.*	2*d.*
Add if in margins, narrow widths or panels	30%	30%	20%	50%
Add if on mouldings	50%	50%	45%	—
Add if on enrichments ..	160%	160%	115%	—

PAPERHANGING

Hanging only—	Per piece—	Lining	Pattern
On walls		5/6	6/8
On Stairs		7/8	9/–
On ceilings		6/8	7/10

CONTRACT • NEWS •

Notes below give basic data of contracts open under locality and authority which are in bold type. References indicate: (a) type of work, (b) address for application. Where no town is stated in the address it is the same as the locality given in the heading, (c) deposit, (d) last date for application, (e) last date and time for submission of tenders. Full details of contracts marked ★ are given in the advertisement section.

OPEN

BUILDING

ACCRINGTON B.C. (a) 4 houses, Within Grove Estate. (b) Borough Engineer, Town Hall. (c) £2. (e) Feb. 21.

* * *

AYCLIFFE DEVELOPMENT CORPORATION. (a) (Contract No. 58) 178 dwellings and 9 lock-up garages in Precincts A4/5; (Contract No. 72) 4 shops, 4 maisonnettes, garages and 2 public conveniences in the "B" Ward Centre. (b) General Manager, Aycliffe Development Corporation, Newton Aycliffe, Co. Durham. (c) 2gns each contract. (e) Feb. 9.

* * *

BEDFORD B.C. (a) (1) 25 garages, Harrowden Road Estate; (2) 26 at the Mile Road Estate; (3) 30 at the Cardington Road Estate; and (4) 6 at the Hereford Road Estate. (b) Borough Engineer, Newnham House, Horne Lane. (c) 1gn. (e) Feb. 12.

* * *

BIRMINGHAM C.C. (a) (Contract 210) 40 dwellings, Gilbertstone Estate, Sheldon; (Contract 244) 12 houses, Gressel Lane, Sheldon; (Contract 246) 6 dwellings, Hawkhurst Road, Kings Heath; (Contract 255) 12 bungalows, Houldey Road, West Heath; and (Contract 279) 12 dwellings, Gerrard Street, Lozells. (b) City Engineer, Civic Centre, 1. (c) 2gns each contract. (d) Feb. 2.

* * *

BOOTLE B.C. (a) 2 blocks of shops, maisonnettes and flats and garages, Captain's Lane site. (b) Borough Surveyor, Town Hall. (c) 2gns. (e) Feb. 13.

* * *

BRIGHTON E.C. (a) Secondary school, Varndean. (b) Borough Engineer, 26-30, King's Road. (c) 3gns. (e) Feb. 25.

* * *

BRISTOL C.C. (a) Secondary school at Ashton Park. (b) City Architect, Council House, College Green, 1. (c) 2gns cheque payable to Corporation. (d) Feb. 9.

* * *

CASTLE DONINGTON R.C. (a) 12 houses at Lockington Lane, Hemington, and St. Andrew's Rise, Kegworth. (b) McCarthy, Collings and Co., 187, Forest Road, Coalville. (c) 2gns.

* * *

CHAILEY R.C. (a) 18 dwellings and ancillary site works, Telscombe Cliffs Way, Telscombe Cliffs. (b) Council's Architect, Council Offices, Lewes House, Lewes, Sussex. (c) 3gns. (e) Feb. 18.

* * *

FLINTSHIRE C.C. (a) Junior and infants' school, Broughton. (b) County Architect, Llwynegrin, Mold. (c) 3gns. (e) Feb. 23.

* * *

HASTINGS CORPORATION. (a) 3-classroom extension to the Hollington Primary Infants' School. (b) Borough Engineer, 37, Wellington Square. (c) 3gns payable to Corporation. (e) Feb. 20.

* * *

ILFORD B.C. (a) Additions and conversion of the Reading Room, Thompson Rooms, High Road, Ilford, into a "Little Theatre." (b) Borough Engineer, Town Hall. (c) 5gns. (e) Feb. 24.

* * *

KNARESBOROUGH U.C. (a) 83 houses, Manor Estate. (b) Messrs. F. Tranmer, 3, Victoria Avenue, Harrogate. (c) 2gns payable to Council. (e) Feb. 9.

KINGSTON UPON THAMES B.C. (a) Conversion of 10 flats. (b) Town Clerk, Guildhall. (c) 2gns. (d) Feb. 7.

* * *

LEEDS C.C. (a) Conversion of "Leafield House," King Lane, Moortown, into a maternity and child welfare centre and clinic. (b) City Architect, Priestley House, Quarry Hill, 9. (c) £1. (e) Feb. 18.

* * *

LEWES B.C. (a) Block of 12 flats, block of 4 flats and 2 lock-up shops, Church Lane Estate (Contract 11). (b) Borough Engineer, Council Offices, Fisher Street. (c) 3gns. (d) Feb. 14.

* * *

LINDSEY C.C. (a) School at Ashby Priory Lane, Scunthorpe. (b) County Architect, County Offices, Lincoln. (e) Feb. 21.

* * *

LONDON—EALING B.C. (a) New laundry building at the Central Baths. (b) Borough Surveyor, Town Hall, W.5. (c) £2. (e) Feb. 21.

* * *

MERTHYR TYDFIL B.C. (a) Dining room and kitchen at Quakers Yard Grammar School. (b) Engineer and Surveyor, Town Hall. (c) £2. (d) Feb. 6. (e) Feb. 21.

* * *

MIDDLEWICH U.C. (a) 16 houses, Chadwick Fields Estate. (b) R. J. B. Wilkinson, Victoria Building. (c) £3. (e) Feb. 16.

* * *

MONTGOMERYSHIRE E.C. (a) Cloakrooms, etc., at Welshpool Grammar School. (b) Director of Education, County Offices, Newtown. (c) 2gns. (e) Feb. 9.

* * *

N. IRELAND—GOVERNMENT OF NORTHERN IRELAND. (a) R.U.C. Barrack at Green Street, Carrickfergus, Co. Antrim. (b) Ministry of Finance (Room 103), Law Courts Building, May Street, Belfast. (c) £5. (e) Feb. 12.

* * *

NORFOLK C.C. (a) Children's home at Gaywood Park, King's Lynn. (b) County Architect, 27, Thorpe Road, Norwich. (e) Feb. 16.

* * *

NORFOLK C.C. (a) Inspector's house at Acle; 2 pairs of houses at Holt; 1 house at East Harling; 1 District Nurse's house at Banham; 1 District Nurse's house at Horstead. (b) County Architect, 27, Thorpe Road, Norwich; stating site or sites. (e) Feb. 9.

* * *

OLD FLETTON U.C. (a) (Contract No. 1) 22 houses; (Contract No. 2) 20; (Contract No. 3) 16; (Contract No. 4) 24 and (Contract No. 5) 6 houses at Chapel Street, Stanground, Peterborough. (b) Messrs. Ruddle and Wilkinson, Long Causeway Chambers, Peterborough; stating contracts. (c) 2gns.

PLOUGHLEY R.C. (a) 1 pair of houses at Evans Lane/Mill Street site and 4 blocks of 4 houses at Evans Lane/Bicester Road site. (b) F. E. Openshaw, Oxford Allied Architects, 65, St. Giles Street, Oxford. (c) £2 each scheme. (e) Feb. 10.

* * *

RUGELEY U.C. (a) Block of 3 aged persons' dwellings at Bow Street. (b) Engineer and Surveyor, The Council House. (c) 2gns. (e) Feb. 9.

* * *

SAMFORD R.C. (a) 15 dwellings at Stratford St. Mary and 15 dwellings at Stutton. (b) Mesrrs. Parmenter, Caston and Porrit, 10a, Queen Street, Ipswich. (d) Feb. 2. (e) Feb. 23.

* * *

SHEFFIELD C.C. (a) Secondary school at Beaver Hill (Handsworth Grange Road). (b) Deputy City Architect, Town Hall, 1. (c) £3. (e) Feb. 13.

* * *

WEM R. C. (a) 8 houses at Stanton and 8 at Bridleway Gate. (b) Messrs. Hind and Brown, 2, Market Street, Hanley, Stoke-on-Trent. (c) 2gns. (e) Feb. 18.

* * *

WEST HARTLEPOOL B.C. (a) Conversion of "Holmewood," Stockton Road, to provide a reception centre for children. (b) Borough Architect, Municipal Buildings. (e) Feb. 13.

* * *

WIGAN B.C. (a) 100 dwellings, Worsley Mesnes Estate. (b) Borough Engineer, Municipal Buildings, Library Street; with details of similar schemes undertaken and names of 2 independent persons to whom reference can be made, also evidence that tenderer will have organization and labour to carry out the work expeditiously. (c) 2gns. (e) Feb. 9.

* * *

WREXHAM B.C. (a) Community centre at Kingsley, Queen's Park, Wrexham. (b) Borough Engineer, 31, Chester Street. (c) 2gns. (e) Feb. 23.

PLACED

Notes on contracts placed state locality and authority in bold type with (1) type of work, (2) site, (3) name of contractor and address, (4) amount of tender or estimate. † denotes that work may not start pending final acceptance, or obtaining of licence, or modification of tenders, etc.

BUILDING

BELFAST CORPORATION. (1) Building works at new power station. (2) Victoria. (3) Stewart and Partners, Ltd., Belfast. (4) £391,211.

OFFICIAL APPOINTMENTS

ANNOUNCEMENTS • CONTRACTS • TENDERS

Rate 1/6 per line, minimum 3/-

Close for press 1st post Monday for following Thursday Issue

APPOINTMENTS

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order 1952.

CITY OF BIRMINGHAM.

PUBLIC WORKS DEPARTMENT.

APPLICATIONS are invited for the posts of QUANTITY SURVEYORS, Grade A.P.T. VI, in the Architectural Department.

Applicants must be Associate Members of the Royal Institution of Chartered Surveyors (Quantity Section) or hold equivalent qualifications.

Applicants must have had experience in the preparation of Bills of Quantities, Interim Certificates and the settlement of Final Accounts.

Salary—Grade A.P.T. VI (£670/735 per annum) in accordance with qualifications and experience.

Housing accommodation is not provided.

The appointments are subject to one month's notice on either side.

The posts are superannuable and subject to a medical examination.

Applications, endorsed "Quantity Surveyor," stating age, qualifications and experience together with the names of two persons to whom reference can be made, should reach the undersigned not later than 21st February, 1953.

Canvassing disqualifies.

A. G. SHEPPARD FIDLER,
City Architect.

Civic Centre, Birmingham, 1. [6899

GOVERNMENT OF THE UNION OF BURMA.

APPLICATIONS are invited for a post of ARCHITECT for the Architectural Branch, Buildings and Roads Department. Minimum qualifications—Associateship of the Royal Institute of British Architects or its equivalent. Pay £225, fixed per mensem. Contract for 3 years. Free passage. Provident Fund. Gratuity. Full terms and conditions with forms of applications obtainable on request from the Embassy of the Union of Burma, 19A, Charles Street, W.1. Applications received up to 15th February, 1953. [6892

HEBBURN URBAN DISTRICT COUNCIL.

APPOINTMENT OF ASSISTANT ARCHITECT GRADE VI.

APPLICATIONS are invited from suitably qualified persons for the appointment of ASSISTANT ARCHITECT in the Architectural Section of the Engineer and Surveyor's Department.

The salary will be in accordance with Grade A.P.T. VI, of the national salary scales, i.e., £670 to £735 p.a. The appointment will be subject to the National Scheme of Conditions of Service and the provisions of the Local Government Superannuation Act, 1937.

The successful candidate will be required to pass a medical examination.

Preference will be given to registered architects who have had experience in the architectural design and construction of housing and general municipal works.

Applications endorsed "Assistant Architect" together with copies of three recent testimonials, must be received by the undersigned not later than Monday, the 16th February, 1953.

T. MEADOWS WRIGHT, LL.M.,
Clerk of the Council.

Council Offices,
Argyle Street,
Hebburn,
Co. Durham. [6903

APPOINTMENTS—contd.

HAYES AND HARLINGTON URBAN DISTRICT COUNCIL.

ARCHITECTURAL ASSISTANT.

APPLICATIONS are invited for the above-mentioned permanent appointment in the Department of the Engineer and Surveyor at a salary in accordance with A.P.T. Division Grade IV of the Scales of Salaries, i.e., commencing at £555 per annum and rising to a maximum of £600 per annum, plus London "Weighting" amounting to £20 p.a. at 21-25 years and £30 p.a. at 26 years and over.

Preference will be given to applicants who have had experience of housing work and have passed the Intermediate Examination of the R.I.B.A.

Forms of application may be obtained, upon receipt of a stamped addressed envelope, from the Engineer and Surveyor, Town Tall, Hayes, Middx, to whom completed applications must be returned by 16th February, 1953. The envelope containing a request for a form of application should not be endorsed.

A. E. HIGGINS,
Clerk of the Council.
[6901

COMPETITION

HOSPITAL AT DOHA, PERSIAN GULF.

THE Government of Qatar, Persian Gulf, invite architects to submit designs for a 100-bed HOSPITAL, complete with staff quarters, at DOHA.

Assessor: Mr. Alexander S. Gray, F.R.I.B.A., of Messrs. W. H. Watkins, Gray & Partners.

Premiums: £1,250, £1,000, £750.

Last day for submitting designs: August 15, 1953.

Last day for questions: March 31, 1953.

Conditions may be obtained on application to: Captain J. E. Stone, C.B.E., M.C., F.S.A.A., Hon. Secretary and Treasurer, International Hospitals Federation, 10, Old Jewry, E.C.2.

Envelopes to be marked "DOHA COMPETITION."

Conditions will not be available until after January 30. Deposit 3 guineas. [6906

MISCELLANEOUS SECTION

RATE : 1/6d. per line, minimum 3/-, average line 6 words. Each paragraph charged separately.

BOX NOS. add 2 words plus 1/- for registration and forwarding replies.

PRESS DAY Monday. Remittances payable to Iliffe & Sons Ltd., Dorset House, Stamford Street, London, S.E.1.

No responsibility accepted for errors.

ARCHITECTURAL APPOINTMENTS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order 1952.

ASSISTANT, intermediate standard, required.—Apply in writing to Bridgwater & Shepheard, 42, Bruton Place, Berkeley Square, W.1, giving details of age, experience training. [6904

ARCHITECTURAL APPOINTMENTS VACANT—contd.

TWO experienced Architectural Assistants required for work on large and varied contracts.—Apply in writing in first instance, stating age, experience and salary required, to Cordingley & McIntyre, F/A.R.I.B.A., The College, Durham. [6884

SITUATIONS VACANT

The engagement of persons answering these advertisements must be made through the local office of the Ministry of Labour and National Service, etc., if the applicant is a man aged 18-64 or a woman aged 18-59 inclusive, unless he or she or the employer is excepted from the provisions of The Notification of Vacancies Order 1952.

ASSISTANT Civil Engineers required for work on large Hydro-Electric Project. Must be fully experienced in setting out work. Apply giving details previous experience, age, salary and when available, to A. M. Carmichael, Ltd., Errochty Project, Blair Atholl, Perthshire. [6896

SERVICES OFFERED

THATCHING and reedlaying contracts undertaken by experts.—J. G. Cowell, Soham, Ely, Cambs. [0122

THE Croydon Drawing Office. Architects' tracings, colouring, specifications, promptly executed. Competitive fees. 54, High Street, Croydon. Uplands 9988. [6894

NETT PRICES Single House. 950 F.S. Priced Bill Quantities. Labour only or Materials-Labour. Your GUIDE to pricing any type of house. I.A.B.S., 170, Bridge Road, Chessington, Surrey. [6895

CONTRACTS WANTED

PAINTING and decorating contracts and sub-contracts wanted, all classes, any area; new work or old.—Henries, 15, Furzedown Drive, Tooting, S.W.17. Streatham 6193. [0127

PAPERHANGING (only) in all grades.—Lincrusta Walton panel goods supplied and fixed by expert tradesmen.—Hooker Bros., 3, Avenue Gardens, Acton, W.3. Acorn 7461. [6830

FOR SALE

ALL Mouldings, Plain and Embossed, and Embossed ornaments. Numerous designs.—Dareve's Moulding Mills, Ltd., 60, Pownall Rd., Dalston, E.8. [0086

AVAILABLE ex-stock at Sheffield, galvanized mild-steel angles in range of sizes from 1¼in × 1¼in × ⅛in up to 8in × 8in × ⅞in and lengths from 3ft 6in to 30ft; unused in excellent condition.—Thos. W. Ward, Ltd., R/S Dept., Albion Works, Sheffield. [6900

CAST Iron Rectangular R.W. Pipes eared, 4in × 3in, 4in × 4in, 5in × 4in and 6in × 4in now available, also C.I. Moulded O.G. Gutters, 4in, 5in, 6in and 7in stocked at Stores Hanwell, London, W.7.—Hills Bros., (Est. 1932), 49, Queen Victoria Street, London, E.C.4. CIT. 3094. [6898

INSURANCE

ARCHITECTS' Indemnity Insurance effected.—Please write for Proposal Form to E. J. SAXBY, Incorporated Insurance Broker, 37a, Carfax, Horsham, Sussex. Tel. 990. [6770

AGENCIES

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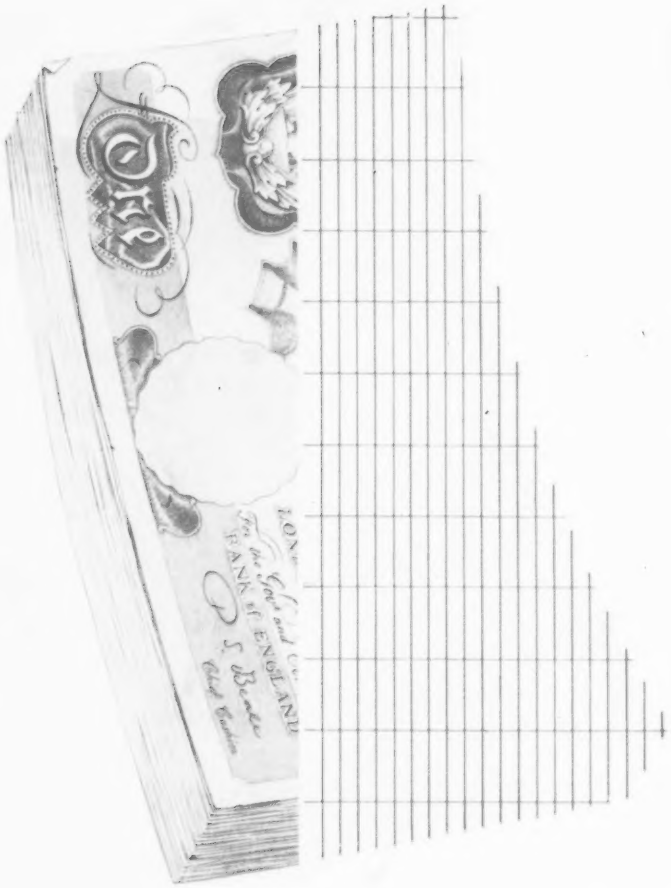

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